1897-1898

SWARTCHILD & CO.

ILLUSTRATED

TRADE CATALOGUE AND PRICE LIST

MANUFACTURERS, IMPORTERS AND JOBBERS OF

Watchmakers', Jewelers' and Engravers' Supplies

OF EVERY DESCRIPTION

Optical Goods, Chains, Charms, Etc.

ORIGINATORS OF THE BOX MATETIAL

AND MAKERS OF

SWARTCHILD'S CELEBRATED WATCHMAKERS' BENCHES.

THE ONLY EXCLUSIVE TOOL AND MATERIAL HOUSE IN THE WEST.

503, 504, 505 MASONIC TEMPLE,

CHICAGO.

DONOHUE & HENNEBERRY, PRINTERS, ENGRAVERS AND BINDERS, CHICAGO.

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THE NEW YORK PUBLIC LIBRARY ASTOR LENOX & TILDEN FOUNDATIONS

INTRODUCTORY.

We take pleasure in presenting this our New Illustrated Catalogue for 1897-1898, which surpasses in completeness any list ever published before in our line. We have endeavored to make this Catalogue everything that could be expected, regardless of time and expense, and trust that it will find due appreciation at the hands of our customers.

We beg to call your attention to the following:

All tools are arranged in alphabetical order.

Do not cut any illustrations out of this Catalogue, but give number and page of article wanted, and all orders will be filled correctly.

If you have no account with us please send Cash with order, or instruct us to send **C. O. D.**

Parties ordering for the first time (if not for cash) will please send references, giving the names of other wholesale houses of whom they have bought goods on time, or refer us to responsible firms or persons of whom we can inquire as to their responsibility.

Goods sent C. O. D. to any part of the country.

Parties strangers to us, ordering C. O. D., must enclose an amount sufficiently large to guarantee Express Charges. This sum will be deducted from bill.

Bulky goods can be sent C. O. D. by freight in care of the nearest bank.

Charges on packages containing repairs must be prepaid.

Packages sent by mail only when so ordered and always at customers' risk.

Unless otherwise instructed all packages over $2.00 in value will be sent by express; if not too heavy, by registered or insured mail.

The charges by mail are as follows: Sealed mail 2 cents per oz. (registered 8 cents extra); unsealed mail 1 cent per oz. (registered 8 cents extra).

Cash orders to be shipped by mail must include full amount of postage.

Old gold and silver taken in exchange for goods at refiner's valuation. We will report value, when requested, before selling.

TERMS AND DISCOUNTS.

Cash with order	6 per cent.
On bills sent C. O. D	6 per cent.
On bills paid within 10 days	6 per cent.
On bills paid within 30 days	5 per cent.

Ninety days time limit.

Again thanking you for past favors and soliciting your future trade, we remain,

Yours respectfully,

SWARTCHILD & CO.

Please Read this Page Carefully.

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TOOLS A.

TURNING ARBORS.

No. 29.	Sets of 12.	Nos. 0 to 12-o	per set,	$0 40
" 30.	" 18.	" 0 to 18-o	"	60
" 31.	" 24.	" 0 to 24	"	75
" 32.	" 12.	" 1 to 12	"	40
" 33.	" 18.	" 1 to 18	"	75
" 34.	" 24.	" 1 to 24	"	1 00
" 35.	" 36.	" 1 to 30	"	1 75

NO. 43. LEFT TURNING ARBOR.

Price.....each, $0 25

Left turning arbors are used for turning out mainspring barrels, covers, etc. The article is held firm by a left nut screw.

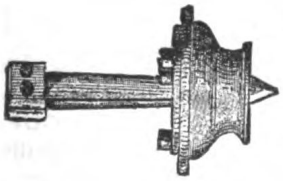
NO. 44. LEFT TURNING ARBOR.

For Clock Work.

Price.....set of 12, $1 65; each, $0 20

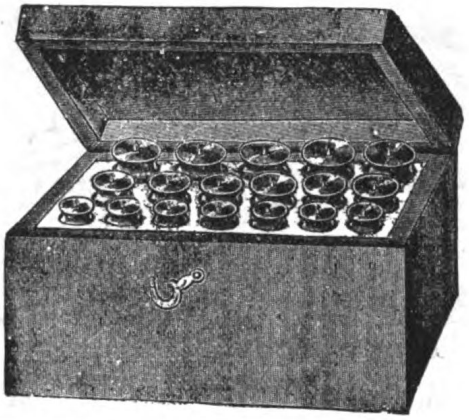
NO. 46. FUSEE ARBOR.

Price..... each, $0 30



NO. 47. FUSEE ARBOR.

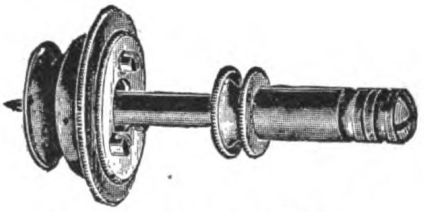
Price.....each, $0 45



TURNING ARBORS IN CASES.

No. 36.	Sets of 12 in cases.	No. 0 to 12	per set,	$0 75
" 37.	" 18 "	" 0 to 18	"	1 00
" 38.	" 24 "	" 0 to 24	"	1 25
" 39.	" 12 "	" 1 to 12	"	75
" 40.	" 18 "	" 1 to 18	"	1 10
" 41.	" 24 "	" 1 to 24	"	1 55
" 42.	" 36 "	" 1 to 36	"	2 25

A good way to keep these tools in order, avoid rust, and save time in looking for the size you are in need of.



NO. 45. FUSEE ARBOR.

With split chuck fastening .....each, $0 50

NO. 48. CORK ARBOR.

Price..... per pair, $0 30

For grinding glasses.

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TOOLS A.

NO. 49. GLASS ALCOHOL CUP.
Oval Cover.

Price.....$0 35
Extra large.....60

Cut ⅔ size.
NO. 50. GROUND GLASS ALCOHOL CUP.

Price.....$0 20

NO. 51. GLASS ALCOHOL CUPS.
Closing outside.

No. 51. Small.....$0 25
No. 52. Medium.....30
No. 53. Large.....35

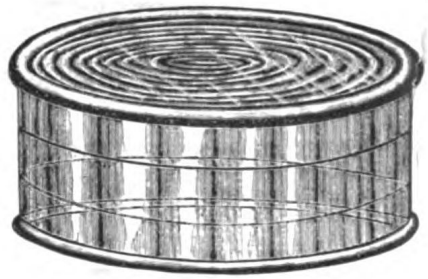
NO. 54. GLASS ALCOHOL CUP.
Closing inside.

Price.....$0 35

NO. 55. GROUND ALCOHOL CUP.

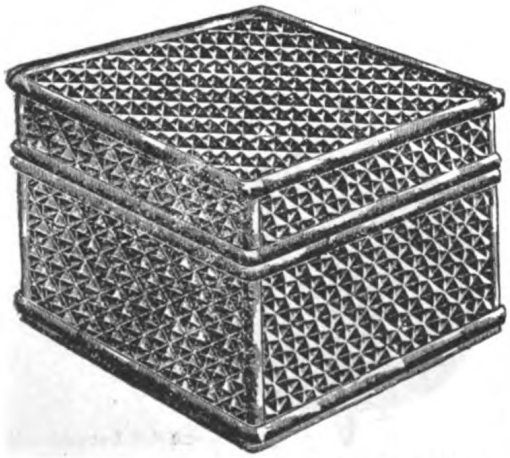
2½ inches high, 3½ inches in diameter, and finely finished, as shown in cut.

Price.....$0 50



Cut ¾ size.
NO. 56. GLASS ALCOHOL CUP.

Price.....each, $0 15



NO. 57. GLASS ALCOHOL CUP.
2¾ inches square.

Price.....each, $0 25

NO. 58. EXTRA LARGE ALCOHOL CUP.
3 in. high, 4 in. diameter.

Price.....each, $0 75

NO. 59. GLASS ALCOHOL CUP.

Extra fine quality, ground and fitted, 2½ inches high, 2¾ inches in diameter.

Price.....$0 50
No. 59½, 2nd grade, 25

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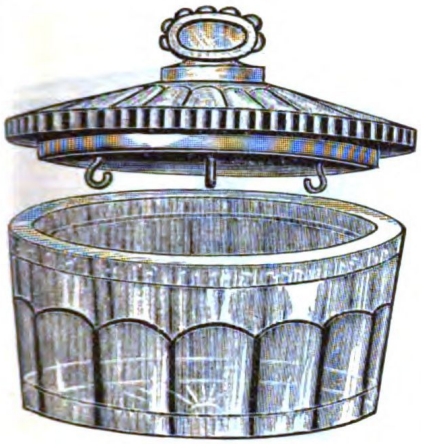
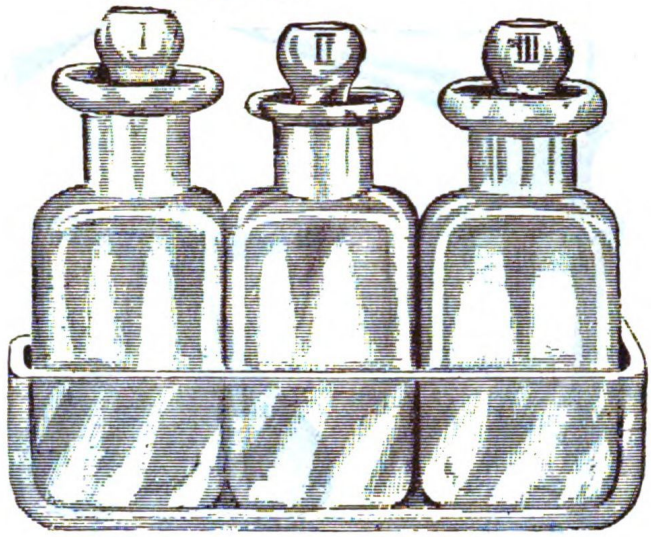
TOOLS A.



Cut ¾ size.

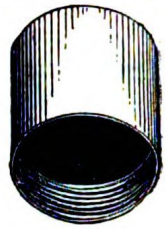
No. 60. Monopole Glass Alcohol Cup.

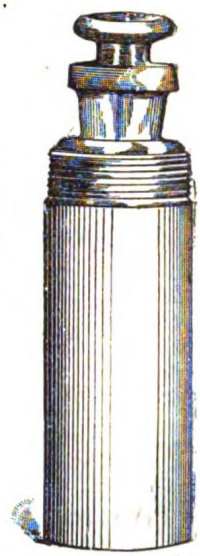
With cork and 3 hooks, as shown in cut, to hang jewelry and movements in cup, letting dirty substance settle in the bottom.
Price.....$0 50



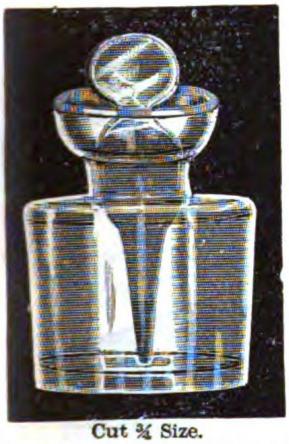
No. 67. Acid Bottles.

In Glass Tray. Cut ¾ Size.
Price.....per set, $0 65





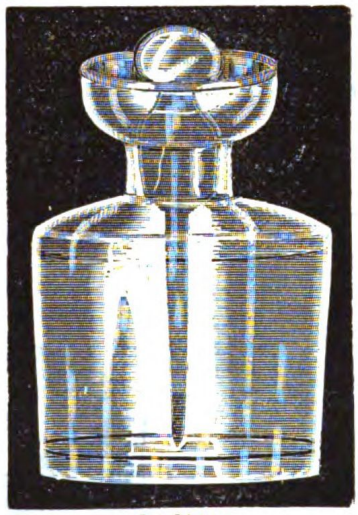
No. 69. Cut Full Size.
Acid Bottle in Aluminium Case.
Price.....$0 75



Cut ¾ Size.

No. 61. Acid Bottle.

Small. Price.....each, $0 15



Cut ¾ Size.

No. 63. Acid Bottle.

Large. Price.....each, $0 25

No. 66. Cut ¾ Size.
ACID BOTTLE.
In Boxwood Case, large double top.
Price.....$0 75

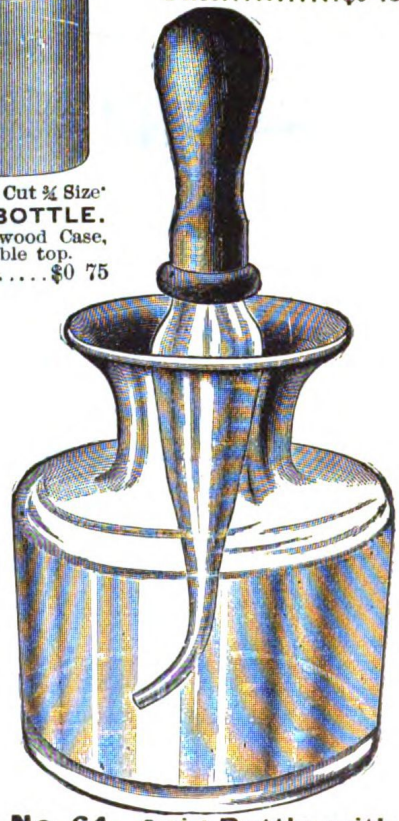
Cut ¾ Size.

No. 62. Acid Bottle.

Medium. Price....each, $0 20

No. 68. ACID BOTTLES. In Wooden Cases.

No. 68.	Small.....each,	$ 0 30
No. 68½.	Large..... "	40
No. 68¾.	Extra Large..... "	75



No. 64. Acid Bottle with Rubber Top.

Price, Small..... $0 30
" Large..... 40

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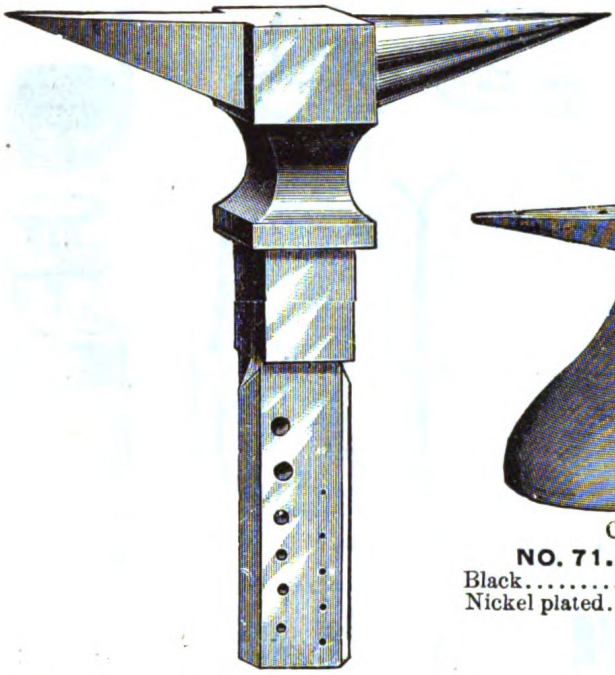
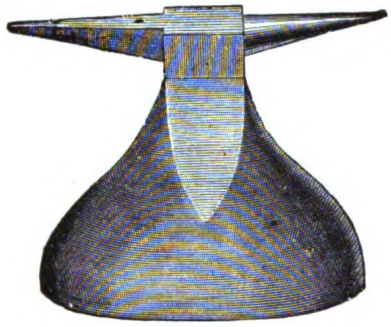
TOOLS A.

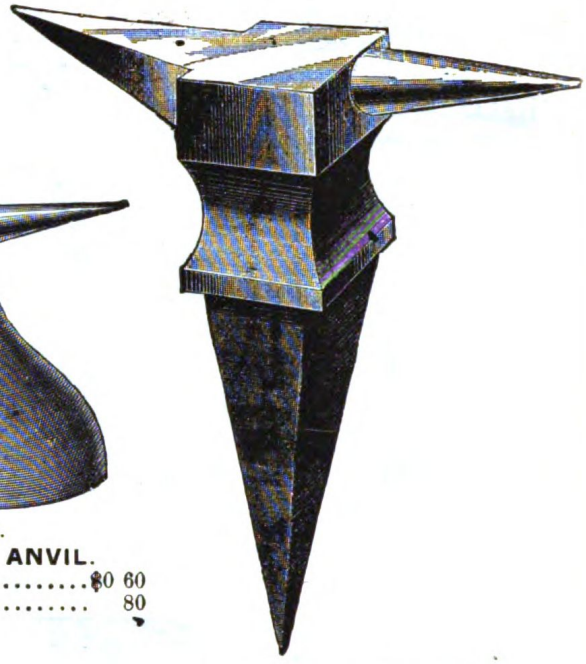




Cut ¾ Size.

NO. 71. HORN ANVIL.

Black.....$0 60
Nickel plated..... 80

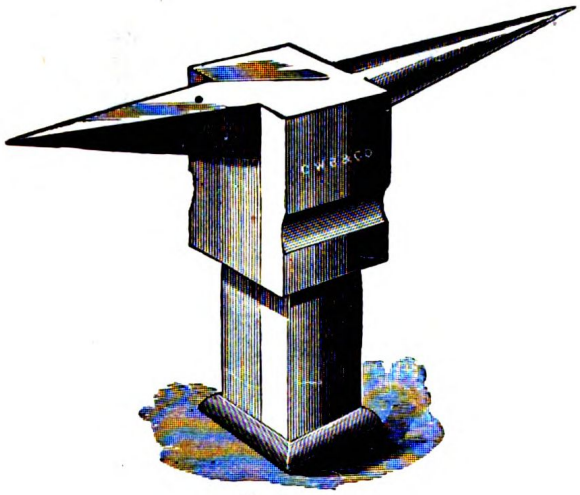


NO. 70. ANVIL AND RIVETING STAKE COMBINED.

Price, Plain..... ....$0 60
" Nickel plated..... 85

NO. 72. HORN ANVIL.

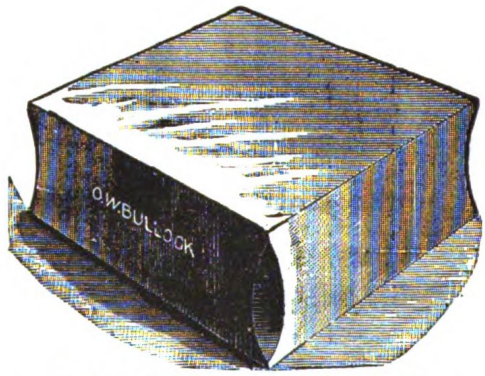
4-inch.....$0 50 5 inch $0 65



Full Size.

HORN ANVIL.

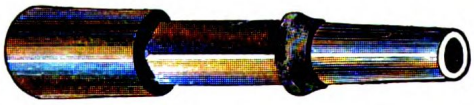
No. 73. Horn Anvil, each.....$0 25
" 74. " " one size larger.. ..... 0 35
Nickel plate extra 0 15
Extra quality ..... 35 and 50



FLAT BOTTOM STEEL ANVIL.

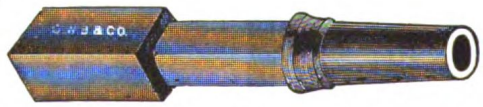
No. 75. 1 inch.....	$0 40	No. 79. 3 inch.....	$1 50
" 76. 1½ "	65	" 80. 3½ "	2 00
" 77. 2 "	90	" 81. 4 "	2 65
" 78. 2½ "	1 15		

MIRROR FACE.



ROUND HOLLOW ANVIL AND STAKE COMBINED.

No. 82. Price.....each $0 20
Nickel plate..... 35



SQUARE HOLLOW ANVIL AND STAKE COMBINED.

No. 83. Price.....each $0 20
Nickel plate..... 35

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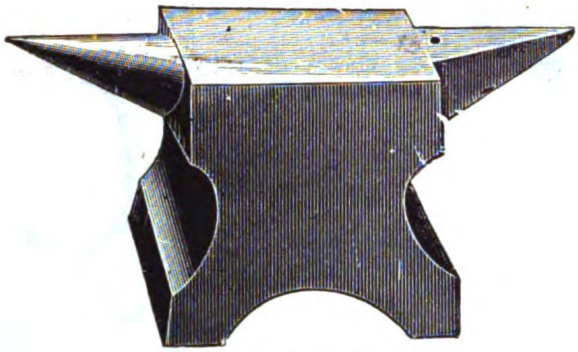
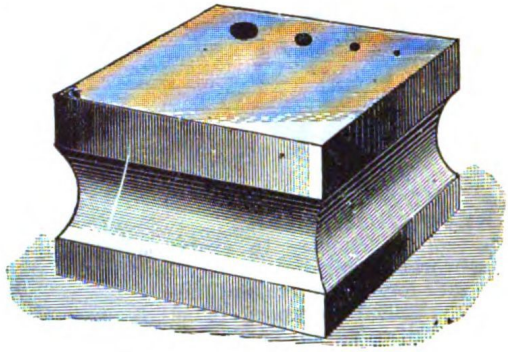
TOOLS A.



HORN ANVILS.

No. 84.	½ lb.	$0 70	No. 88.	2 lbs.	$1 50
No. 85.	¾ lb.	80	No. 89.	2½ lbs.	2 00
No. 86.	1 lb.	1 00	No. 90.	3 lbs.	2 50
No. 87.	1½ lbs.	1 25	No. 91.	3½ lbs.	3 00

No. 91½. New Style to fasten to bench..... 75



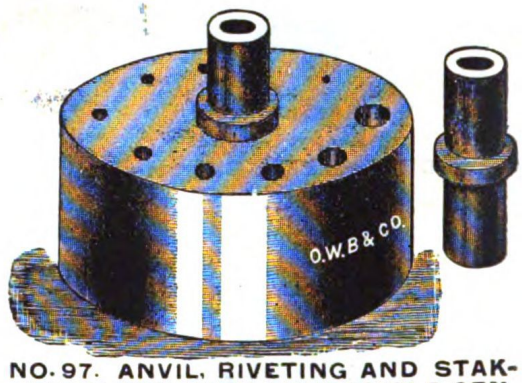
ANVIL AND RIVETING STAKE.

No. 96. Anvil and Riveting Stake.....$0 40
Nickel Plated..... 50

VULCAN ANVIL.

No. 92. Weight, 5 lbs.....Price each, $2 00
No. 93. " 10 lbs..... " " 2 75
No. 94. " 15 lbs..... " " 3 25

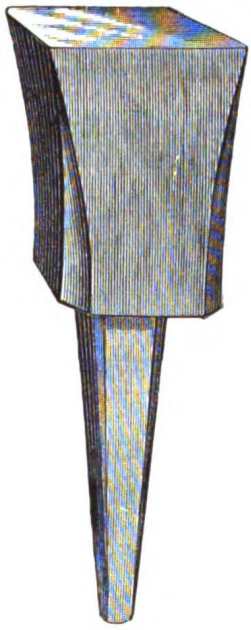
The best anvil made; larger sizes if required.



NO. 97. ANVIL, RIVETING AND STAKING BLOCK, WITH REVERSIBLE CENTER HUB COMBINED.

This makes the stake invaluable for putting on hands, etc.

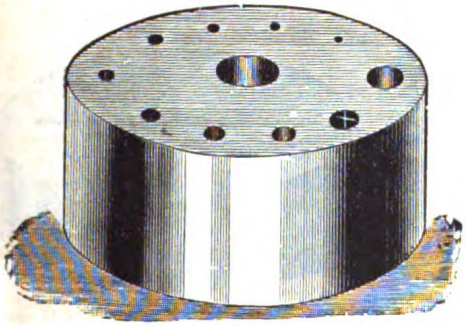
Price, Plain $0 50
" Nickel Plated..... 60



ANVIL.

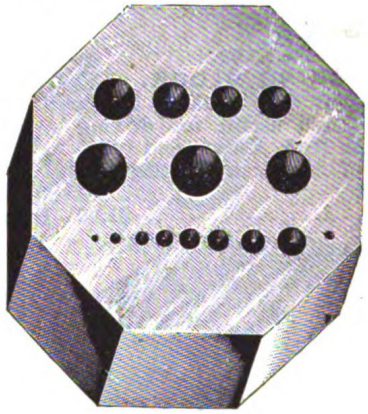
Cut is ⅔ Size.

No. 98. 1½ in. price$0 50
" 99. 1¾ in. " 60
" 100. 2 in. " 80



ANVIL AND RIVETING STAKE.

No. 95. Each, best quality.....$0 40
" Nickel plated, best quality. 50



NEW STYLE OCTAGON ANVIL AND RIVETING STAKE.

No. 101. Price, Plain.....$0 85
" Nickel Plated..... 1 06

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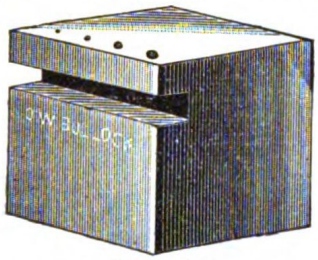
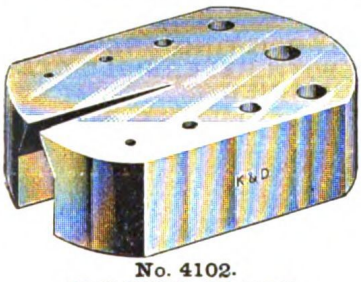
No. 4100.
NEW STYLE REVOLVING ANVIL.

This tool is first-class in every respect, workmanship and material. It is made of forged steel, turned and finished by skilled workmen. The anvil is hardened, the horns are drawn down to spring temper.
Price.....$1.25



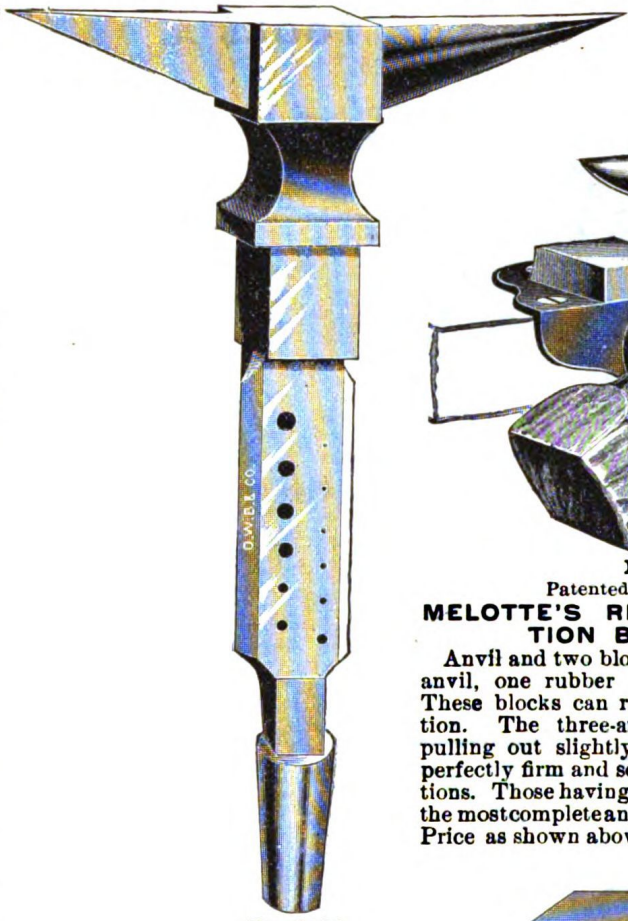
No. 4101.
SIX-SIDED STEEL BENCH ANVIL.

Side, Two Inches. Nicely Polished. Weight, 2 Pounds. Made from Fine Steel.
Price, Plain..... $1.40
" Nickel-plated..... 1.60



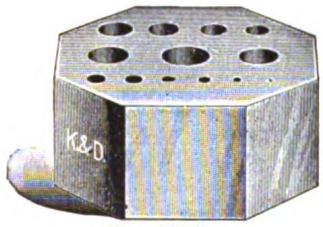
No. 4102.
STAKING BLOCK.

The V in this Staking Block will be found useful for driving out of the Hub, Escape and other Pinions of American Watches, for Pivoting.
Price.....$1.00



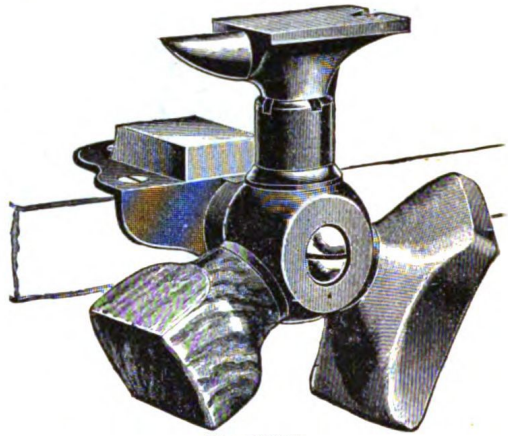
No. 4104.
COMBINED ANVIL RIVETING BLOCK AND HOLLOW STAKE.

Price, Plain.....$0.75
" Nickel-plated..... 1.00



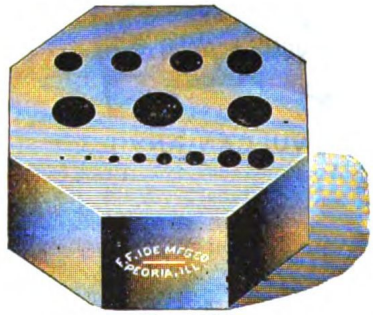
No. 4109.
STAKING BLOCK.

Price.....$0.75



No. 4105.
Patented September 13, 1892.
MELOTTE'S REVOLVING COMBINATION BENCH-BLOCK.

Anvil and two blocks combined in one—steel anvil, one rubber and one wood filing bed. These blocks can readily be turned to any position. The three-armed hub is revolved by pulling out slightly, and is automatically held perfectly firm and solid in any of the three positions. Those having them in use pronounce them the most complete anvil and filing-block ever used.
Price as shown above.....$3.00

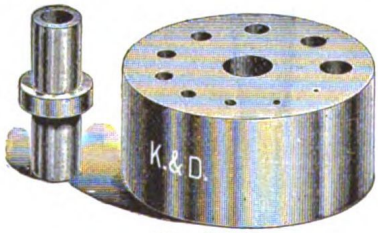


No. 4106.
IDE'S BENCH STAKING BLOCK.

Made of the best quality tool steel, warranted hard throughout.
Price, Nickel-plated .....each $1.00

No. 4103.
STAKING BLOCK.

Price.....$1.00



No. 4108.
STAKING BLOCK.

Price.....$0.65

No. 4107.
STAKING BLOCK.

Price.....$0.75

The above Blocks marked on Cuts K & D are the Finest yet produced, made with the same care, and finished equally as well as any Staking Tool Die.

NICKEL-PLATED. WARRANTED HARD.

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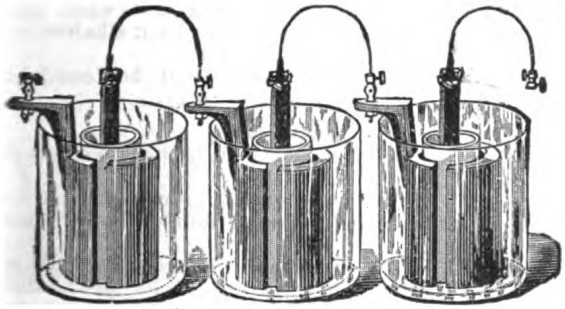
TOOLS B.



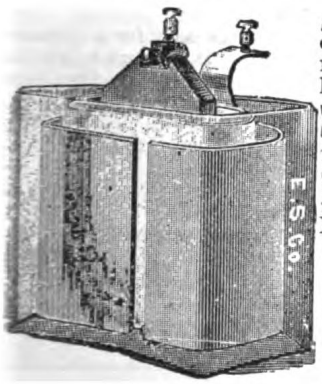
NO. 102. CARBON BATTERY.

PRICE FOR SINGLE CELL.	4 x 4 No. 1.	4½ x 4½ No. 1½	6 x 8 No. 2	6 x 9 No. 3.
No. 103. Cell complete	$1 35	$1 70	$3 00	$6 20
" 104. Jar only	20	25	35	1 40
" 105. Zinc only	40	40	1 30	1 40
" 106. Zinc connector	15	15	1 30	20
" 107. Porous cup only	12	20	30	80
" 108. Carbon only	10	20	30	90
" 109. Carbon connector	50	60	75	1 00
" 110. Carbon clamp	15	60	75	1 50

THE CARBON BATTERY.—The amalgamated zinc is placed in the glass jar, the porous jar in the center of the zinc cylinder and the carbon in the porous jar. In the outer jar is sulphuric acid, diluted with twelve times its weight of water, and in the porous jar electropoion fluid.

ELECTROPOION FLUID.—To eight pints of water add two pints of sulphuric acid. While the mixture is still hot stir in one pound of bichromate of potash, pulverized. It is ready for use when cold. Use an earthen vessel for mixing. The height of the liquids in the jar and the porous cell should be about the same. Clean the cells occasionally, and soak porous cups in water to remove acid.

NO. 111. NICKEL-PLATING BATTERY.

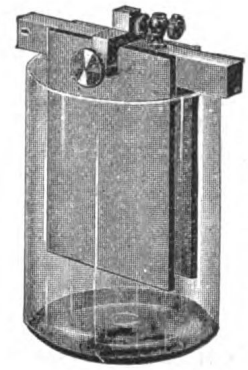


An improved Bunsen Cell of great power, for nickel and electro-plating, striking, electro-motors, etc. One hundred gallons of nickel solution have been used successfully with two of these cells. The glass jars contain six quarts, forming a very convenient tank for experimental work.

No. 111.	Cell, complete	$5 00
" 112.	Carbon, 1x4½x9	1 60
" 114.	Carbon Clamp, Platinum Faced	1 00
" 115.	Porous Cup	50
" 116.	Glass Jar, 6x8x9in	1 00
" 117.	Zinc, Heavy Rolled	1 00
" 118.	Zinc Connector.	15

DIRECTIONS.—In setting up the Nickel-Plating Battery, amalgamate the zincs thoroughly, inside and out. Into each porous cup put two ounces of nitric acid, and half fill the cup with a mixture of equal parts, by measure, of water and sulphuric acid. Place the carbon in the porous cup, and add the above mixture until it reaches the proper height, as mentioned below. Put the zinc in the outer or glass jar, and fill to top of zinc with a mixture of one part of sulphuric acid to twelve parts of water, previously mixed and allowed to cool. The fluids in the porous cup and outer jar should be of the same height. When the liquid in the jar becomes milky replace it with fresh solution. Add occasionally a little nitric acid to the liquid in the porous cells, and keep the zincs well amalgamated. Nitric acid, at forty degrees, clear or saturated with bi-chromate of potash, increases the intensity of this battery; or, if desired, the Electropoion fluid may be used.

For separate parts of this Battery, see opposite No. correspond with No. above.



NO. 131 SMEE BATTERY.

The liquid used to charge this battery is dilute sulphuric acid—about one part acid to ten parts water.

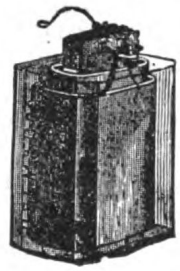
Keep the zincs well amalgamated and clean, and when the solution becomes old and weak put in new. Rinse the plates in clean water occasionally.

SMEE BATTERIES.

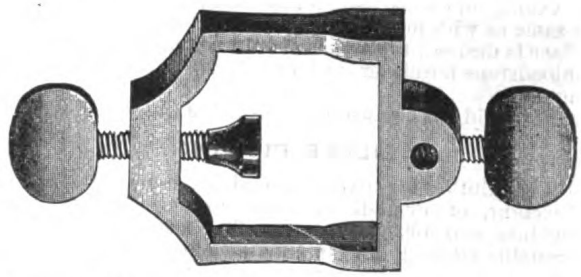
SIZE OF ZINC PLATES.	No. 1. 3x4	No. 2. 4x5.	No. 3. 5x7.	No. 4. 6x8
No. 131. All Complete	$2 40	$2 70	$3 45	$5 05
" 132. Zincs, Rolled, pair.	40	50	70	1 20
" 133. Platinized Silver plate and connection.	1 30	1 50	2 00	3 00
" 134. Zinc Clamp	50	50	50	50
" 135. Jar	20	20	25	35

NITRO-CHROMIC BATTERY.

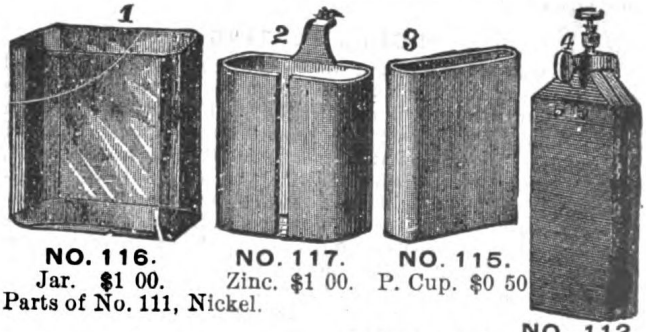
FOR GOLD, SILVER AND NICKEL PLATING, ELECTRIC LIGHT AND LABORATORY PURPOSES.



No. 120.	Per Cell, Complete	$5 00
" 121.	Carbon	1 60
" 122.	" Connection and Clamp	65
" 123.	Glass Jar, 5x8x8¼ inches.	75
" 124.	Porous Cup	50
" 125.	Perforated Rubber Partition	15
" 126.	Zinc	1 50
" 127.	Zinc Connection	15
" 128.	Copper Connecting Strap.	35
" 129.	Compound Nitro-Chromic Salts, per lb	30



NO. 113. CARBON CLAMP.....each, $0 60



NO. 116. Jar. $1 00. **NO. 117.** Zinc. $1 00. **NO. 115.** P. Cup. $0 50

Parts of No. 111, Nickel.

NO. 112. Carbons and Clamp. $1 60.

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B. BATTERY SUPPLIES—Continued.

ANODES.

No. 136. Pure Gold Anodes.....per dwt., $1 25
" 137. " Silver " .....per oz., 1 25

We can furnish the following sizes of Nickel Anodes, Pure Cast Nickel, in any quantity, per lb., $1 25

No. 138.	2 x 4 x 3-16	inch	thick,	weight	8	oz.
" 139.	2½ x 8 x ⅜	"	"	"	2⅛	lbs.
" 140.	4 x 7 x 5-52	"	"	"	2½	"
" 141.	4 x 7 x 1⅛	"	"	"	1⅛	"
" 142.	5 x 8 x ½	"	"	"	4¼	"
" 143.	5 x 12 x ½	"	"	"	8½	"
" 144.	8 x 12 x ½	"	"	"	14	"

This is the best anode in the market.

PLATING SOLUTIONS FOR USE WITH BATTERY.

No. 145. Gold Plating Solution for Battery, per pint, $1 25
" 146. " " " " " per quart, 2 00
" 147. Silver " " " " " 1 00
" 148 Nickel " " " from tank, per gallon..... 1 00

GOLD PLATING.

The article to be gold plated must be carefully cleaned, attached to the zinc pole of the battery, and immersed in the solution, which should be kept hot while the deposition is going on. It should be kept in the solution until it receives the proper thickness of deposit, which will be aided by occasionally removing the article, and after cleaning and scratch-brushing, reimmersing it. It is also necessary in order to get a bright deposit to keep the article moving in the solution.

The solution is easily made by connecting the battery to two gold plates, and suspending them in a strong solution of cyanide of potassium until the one attached to the zinc plate of the battery receives a deposit; this can then be taken out, and the solution is ready for use; the other remaining in, is gradually dissolved, keeps uniform the amount of gold in the solution.

For coloring jewelry and other articles, a pure gold solution is generally used, and the article merely cleaned after the operation.

Coin gold can be used for plating, and its solution made the same as with pure gold. After plating, where a polished surface is desired, the article should be burnished with a steel or bloodstone burnisher, and a final gloss imparted with fine rouge.

For Gold Plating use 1 Cell No. 103 Carbon.

SILVER PLATING.

The solution for silver plating is made by using one part, by weight, of cyanide of silver to ten parts cyanide of potassium, and 100 parts water. The article requires to be thoroughly cleaned, and should be kept in motion while in the plating liquid. After the plating, the article is finished by burnishing and buffing as with gold.

For Silver Plating use 1 to 3 Cells according to quantity and size of work.

NICKEL PLATING.

The solution is easily made by adding to the dry crystal of protosulphate of nickel as much liquid ammonia as is necessary to dissolve them, and the dark blue fluid is then ready for use. Another: To one hundred parts sulphate of nickel add fifty-three parts tartaric acid dissolved in water, and fourteen parts caustic potash. The articles to be nickel-plated must be polished before plating, as the deposit is too hard to be burnished or scratch-brushed, and can only be polished with composition and rouge. When the deposit is too thick it peels off, but a little experience will enable the operator to avoid this fault. Large anodes should be used and kept in the solution when not in use. When first made a solution must be used for some days before the metal becomes evenly distributed through the liquid, and when properly made the solution should be neither acid nor alkaline.

For Nickel Plating use 2 or 3 Cells.

Full directions for all Plating will be found in our Electro-Plating Books, see pages 36 to 39

CAUTION.

In making connections, clean all parts with emery paper, or scrape them.

Wind wires tightly together, and screw bindingposts tight.

Do not allow naked wires to touch damp or metallic surfaces.

Do not allow any solutions to get into any cuts on the hands.

Remember that all battery and plating solutions are *poison* taken internally.

It is best to make your own solutions, as most of the necessary chemicals can be procured at any drug store.

CHEMICALS AND BUFFING MATERIAL.

Cyanide Potassium, C. P., per lb.....$ 0 80		Copper Sulphate...per lb.,	$0 10
Cyanide Potassium, Fused, per lb 55		Crocus Composition, "	30
Cyanide Copper....per lb., 2 00		Crocus, Powdered... "	30
Cyanide Tin..... " 1 00		Emery Grain..... "	20
Cyanide Zinc ..... " 2 00		Hydrometer .....each,	75
Carbonate Copper, " 50		Nickel Salts .....per lb.,	50
Carbonate Potash, " 25		Rouge, Gold..... "	60
Carbonate Nickel, " 1 50		Rouge, Silver..... "	60
Carbonate Zinc.... " 50		Rouge, Nickel..... "	50
Chloride Gold.....per oz., 15 00		Copper Solution, per gal.,	1 50
Chloride Nickel....per lb., 2 00		Copper Solution, per qt.,	50
Chloride Silver ....per oz., 1 25		Bronze Solution, per gal.,	1 50
Copper Wire.....per lb., 40		Bronze Solution, per qt.,	50
		Brass Solution, per gal.,	1 50
		Brass Solution, per qt.,	50

For other solutions see page 270.

JEWELER'S OUTFIT FOR GOLD AND SILVER PLATING.

In this set is included all that is necessary for a jeweler or watch repairer to start business with. It comprises all the Batteries, Solutions, Chemicals and Apparatus that are required, with instructions, viz.:

2 Two-quart Smee Batteries,
2 Two-quart Solution Dishes,
1 Stand with Pan,
1 Pint Cyanide Silver, with bottle,
½ Pound Cyanide of Potassa, with bottle,
1 Test Bottle Nitric Acid, with ground stopple,
½ Pound Mercury and bottle,
1 Ounce Silver Plate and Wire.
1 Copper Plate and Wire,
4 Pennyweights Gold Plate and Wire,
1 Scratch Brush,
1 Lamp,
1 Soft Brush for cleaning work,
1 Box Ground Pumice Stone,
1 Box Whiting,
2 Connecting Cups,
1 Graduate Glass,
2 Glass Rods for stirring Solution,
1 Hand Brush,
1 Burnisher,
1 Bottle of Crocus,
2 Pieces of Chamois Leather,
1 Bottle of Rouge,
1 Bottle of Gold Solution,
1 Blowpipe,
1 Box and Thermometer.
1 Two-quart Bottle Silver Solution.

The above chemicals can be obtained in any drug store. Many of them being liable to injure other goods, it would be advisable to purchase them of a local dealer if possible.

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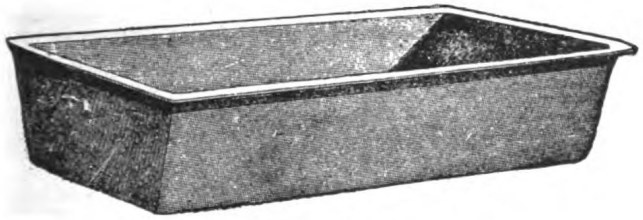
TOOLS B.

BATTERY SUPPLIES--Continued.

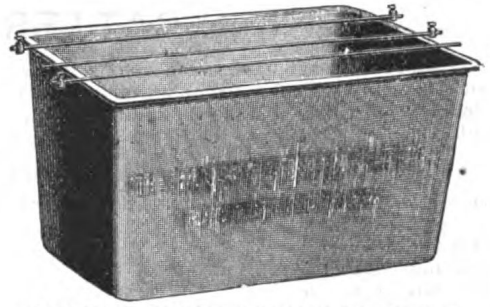


SQUARE IRON TANKS.

For Potash, Hot Water, Sawdust, Etc.

No. 151.	16x16 in.	10 in.	deep	3 00	No. 157.	36x24 in.	16 in.	deep	$12 00
" 152.	20x14 "	12 "	"	3 25	" 158.	48x20 "	16 "	"	14 00
" 153.	23x15 "	15 "	"	5 00	" 159.	48x24 "	16 "	"	16 00
" 154.	24x20 "	12 "	"	5 00	" 160.	60x20 "	16 "	"	17 25
" 155,	24x20 "	18 "	"	8 00	" 161.	72x20 "	16 "	"	19 50
" 156.	36x20 "	12 "	"	10 00	" 162.	96x20 "	16 "	"	24 25

With overflow and discharge plug, from $1.00 to $3.00 extra. A gallon contains 232 cubic inches.

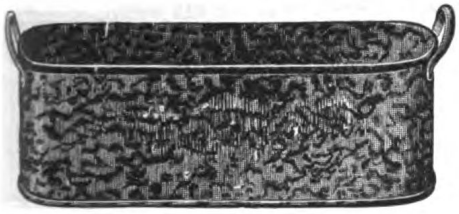


CHEMICALLY ENAMELED IRON TANKS.

These are Enameled with a white acid-proof enamel and highly recommended for all solutions. Other shapes and sizes.

No.	In. Long.		In. Wide.		In. Deep.	Price.
163	12	by	8	by	11	$5 00
164	17		8		8	5 00
165	20		14		15	12 00
166	23		15		15	14 00
167	24		18		12	15 00
168	24		20		12	18 00
169	36		20		14	21 00

We can furnish these up to 5½ ft. long, 24 in. wide, 19 in. deep.



AGATE OVAL VESSELS FOR GOLD AND OTHER SOLUTIONS.

This material stands Cyanide Solutions, Acids, etc., and can be furnished in various shapes and sizes.

No.	In. long.		In. wide.		In. deep.	Each.
170	16	by	6	by	4½	$3 25
171	18		7		5	3 75
172	20		9		6	4 50
173	22		9		6	5 50
174	24		10		7	6 50

OVAL IRON TANKS FOR GOLD AND OTHER SOLUTIONS.

No.	Gal.	Ena'led.		No.	Gal.	Enam'led.	
175	1	Each,	$1 20	175a	4	Each,	$2 60
176	1½	"	1 40	176b	5	"	3 00
177	2	"	1 65	177c	6	"	3 40
178	2½	"	1 80	178d	8	"	5 30
179	3	"	2 10	179e	10	"	6 50

NO. 180.

EXTRA GLAZED STONEWARE DIPPING BASKETS.

No.	Capacity.	Size in In.	Each.
180	1 gal.	6¾x7¾ deep	$0 75
181	1½ "	7 x 8 "	1 00
182	2 "	8 x 9 "	1 25

BATTERY SUPPLIES.

No. 194.	Bichromate Potash per pound.....	$0 25
No. 195.	Blue Vitriol, small packages, per lb.... Blue Vitriol per bbl. at lowest market prices.	20
No. 196.	Bisulphate of Mercury, per oz.....	20
No. 197.	Fluid for Carbon Battery, per lb....	20
No. 198.	Quicksilver, per lb (subject to market changes).....	75
No. 199.	Sulphate of Zinc, per lb.....	20
No. 200.	Sal Ammoniac per pound.....	20
No. 201.	Rolled Zinc Plates per lb.....	25
No. 202.	Platinum sheet, per dwt. (subject to market changes.....)	75
No. 203.	Platinum wire, do..	75
No. 204.	Tin Foil, per lb.....	50
No. 205.	Sulphuric acid, lb..	20
No. 206.	Nickel salt per lb...	60

NO. 183.

EXTRA GLAZED STONEWARE DIPPING BASKETS.

No.	Capacity.	Size in In.	Each.
183	¼ gal.	5x3 deep	$0 75
184	½ "	6x3½ "	80
185	1 "	8x5 "	1 00
186	1½ "	9x6 "	1 50

NO. 187.

NO. 188.

DIPPING BASKETS.

Size in inches.	Each.	Size in inches.	Each.
9x5 deep.....	$0 90	9x5 deep.....	$1 00

CARBON PLATES.

No. 189.	3 x 2 x ¼	each,	$0 06
" 190.	5¾x1⅝x5/16	"	08
" 191.	6x⅞x⅝	"	08
" 192.	8x2x⅞	"	30
" 193.	9x6x¼	"	40

We can furnish price on any Gold, Silver or Nickel outfit of all sizes and description, at lowest market price. Prices quoted on application.

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BATTERY SUPPLIES—Continued.

NOTICE.—We have taken special pains to select such Plating Outfits to meet with the requirements of Electro-Platers, and therefore sell them to the purchaser at his own risk, and under no circumstances can they be sent on approval, as we find that the fault lies with the inexperienced plater, but always prove satisfactory with men who have handled batteries before; this is the only reason we call your attention to the above.

No. 1. Silver-Plating Outfit.

One No. 102 continuous current Battery, with rods, connections, hanging wires, etc.
One gallon Jar.
One half-gallon Silver Solution.
One box of Rouge.
One box of Pumice Stone.
One Silver Anode.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$6.00.

No. 2. Silver-Plating Outfit.

One No. 102 continuous current Battery, complete with rods, connections, hanging wires, etc.
One 2-gallon Jar.
One gallon Silver Solution.
One and one-half ozs. Silver Anode.
One Cleaning Brush.
Box of Rouge.
One box of Pumice Stone.
One box of Tripoli.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$9.75.

No. 3. Silver and Gold-Plating Outfit.

Two No. 102 continuous current Batteries, with rods, connections, hanging wires, etc.
One pint of Gold Solution.
One Gold Anode.
One 2-gallon Jar for Gold Bath.
One gallon of Silver Solution.
One Silver Anode.
One 4-gallon Jar for Silver Bath.
One Cleaning Brush.
One Scratch Brush.
One Steel Burnisher.
One box of Rouge.
One box of Tripoli.
One box of Pumice Stone.
One box of Whiting.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$18.00.

No. 4. Outfit for Gold-Plating.

One No. 102 6x8 continuous current Battery, complete with rods, connections, hanging wires, etc.
One 14-karat Anode.
One quart 14-karat Solution.
One 2-gallon Jar.
One Scratch Brush.
One Cotton Flannel Buff.
One stick of Rouge.
One box of Rouge.
One box of Tripoli.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$8.75

No. 5. Outfit for Gold-Plating.

One No. 111 6x8 continuous current Battery, with rods, connections, hanging wires, etc.
One half-gallon Gold Solution, best.
One Gold Anode, 14 or 24 karat.
One 4-gallon Jar.
Three Scratch Brushes.
Two Cotton Buffs.
Stick of Rouge.
One box of Rouge.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$18.00.

No. 6. Outfit for Nickel and Copper-Plating.

One No. 111 continuous current Battery, with rods, connections, hanging wires, etc.
One 6-gallon Jar for Nickel Bath.
One 6-gallon Jar for Copper Bath.
Four gallons Nickel Solution.
Nickel Anodes.
Two gallons Copper Solution.
One Copper Anode.
One Hydrometer.
Cyanide Potassium.
One box Powdered Pumice Stone.
Bottle of Vienna Lime.
One Muslin Buff.
Crocus Composition.
Emery.
Assorted Scouring Brushes, three, four and six rows.
Potash Brush.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$23.50.

No. 7. Outfit for Silver-Plating.

Same capacity as our No. 111 outfit.

One No. 102 6x9 continuous current Battery, with rods, connections, hanging wires, etc.
Three gallons Silver Solution.
Three Silver Anodes.
One 6-gallon Jar.
One Scratch Brush.
Cotton Flannel Buff.
One stick of Rouge.
One box of Rouge.
Box of Pumice Stone.
Box of Tripoli.
Copy of Watts' Electro-Metallurgy.
Price, complete.....$26.00

No. 8. Outfit for Gold, Silver, Copper and Nickel-Plating.

Complete for Gold, Silver, Copper and Nickel-Plating, with capacity enough for casters, musical instruments, small bicycle sundries, etc.

No. 111 continuous current Battery, complete with rods, connections, hanging wires, etc.
One 6-gallon Stoneware Jar for Silver Bath.
One 6-gallon Stoneware Jar for Nickel Bath.
One 6-gallon Stoneware Jar for Copper Bath.
One 4-gallon Stoneware Jar for Gold Bath.
Three gallons Silver Solution.
Three Silver Anodes.
One quart rich Gold Solution, 14-karat.
One Gold Anode.
Four gallons Nickel Solution.
Two pure Nickel Anodes (whitish deposit guaranteed).
One Hydrometer.
Two gallons Copper Solution.
One half-pound chemically pure Copper Anode
One bottle of Vienna Lime
One box of Crocus.
One box of Tripoli.
One pound Cyonide Potassium.
One package Boxwood Sawdust.
One stick of best Rouge.
One box of Pumice Stone.
One copy of Watt's Electro-Metallurgy.
One copy of Practical Points on the Deposition of Metals.
Price, complete with full instructions.....$47.00.

☞ We are prepared to furnish any size Plating Outfit wanted.

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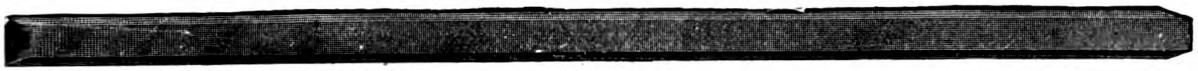
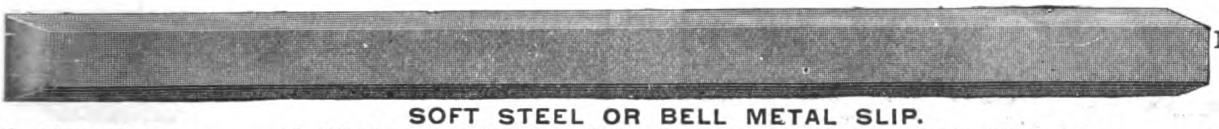


No. 207.

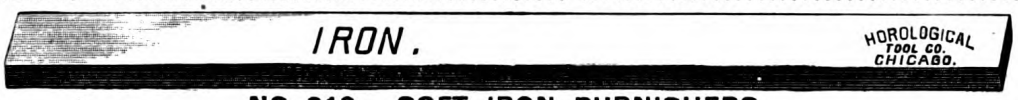
No. 208.



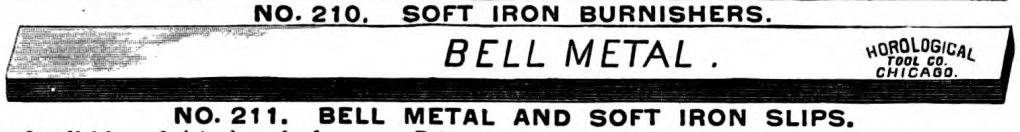
No. 209.

SOFT STEEL OR BELL METAL SLIP.

No. 207. Price.....each, $0 10 No. 208. Price.....each, $0 15 No. 209. Price.....each, $0 20
Soft Steel, small..... " 20



NO. 210. SOFT IRON BURNISHERS.



NO. 211. BELL METAL AND SOFT IRON SLIPS.

For grinding and polishing, finished ready for use. Price.....each, $0 25

Cut is full size.

NO. 216. BROACH HANDLE.

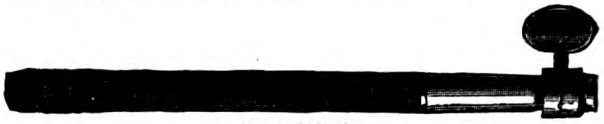
Ebony Handle. Price.....each, $0 10

NO. 4111. BROACH HOLDER. Birch's.

Price.....each, $0 15
" Nickel-plated..... " 25

NO. 4110. VOCK'S ADJUSTABLE NICKEL-PLATED BROACH HANDLE.

Price.....each, $0 15



Cut is full size.

NO. 215. BROACH HANDLE.

Steel. Price.....each, $0 10

BROACH HANDLE.

No. 212. Rosewood, 3-inch. Per doz., $0 45
No. 213. " 4 " " 50
No. 214. " 5 " " 60
Most practical handle for large broaches.

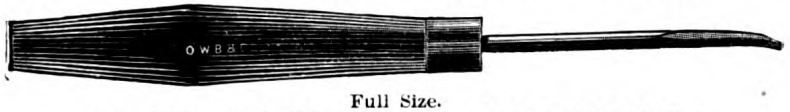
NO. 217. BROACH HANDLE.

Bone Handle, Nickel-plated Ferrule and Adjustable Jaw.

Price.....each, $0 15

NO. 218. BROACH HANDLE.

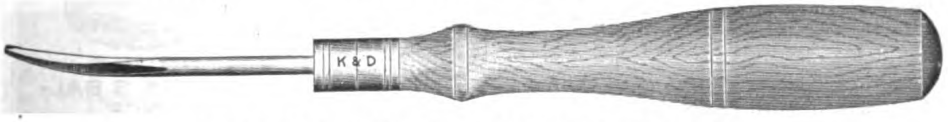
Ebony Handle, Split Jaw. Price.....each, $0 30



Full Size.

NO. 220. WATCH BARREL HEAD REMOVED.

Price.....each, $0 15



NO. 4112 BARREL HEAD REMOVER.

Very fine tempered Steel. Price.....each, $0 25

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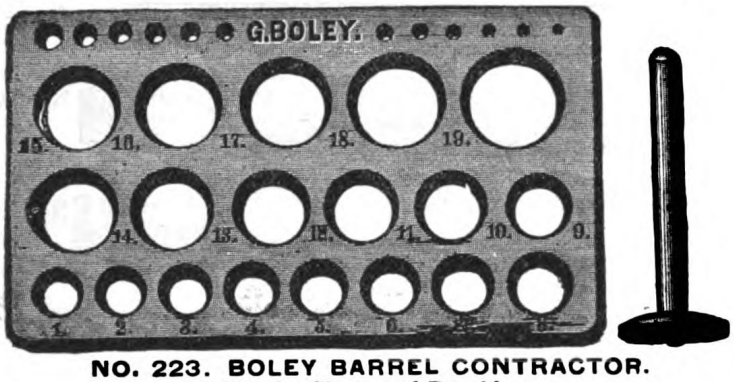
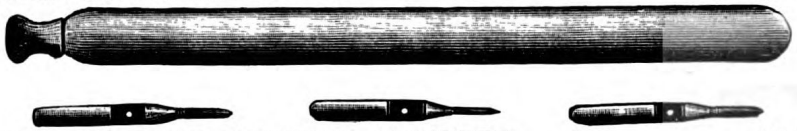
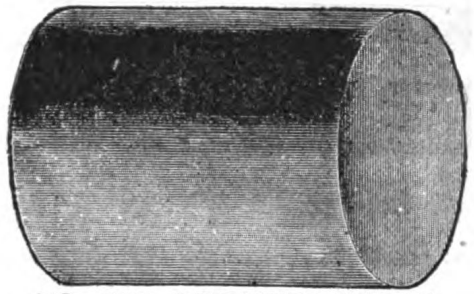
TOOLS B.



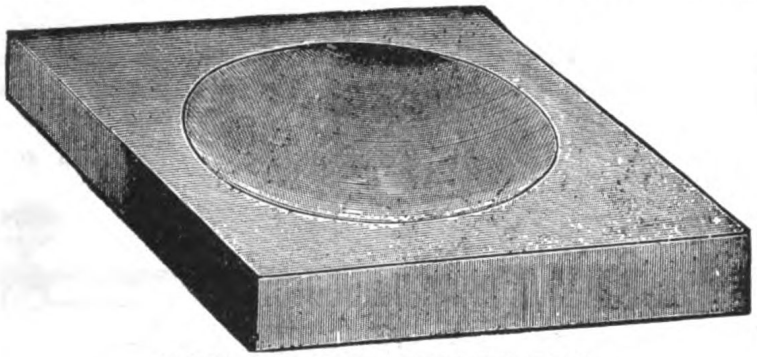
NO. 223. BOLEY BARREL CONTRACTOR.
Simple, Cheap and Durable.
Price. $0 75



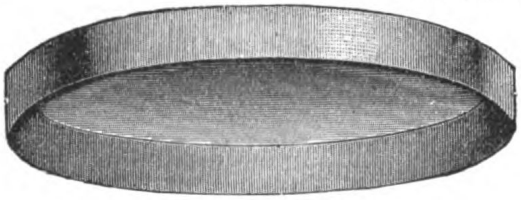
NO. 222. BARREL-CATCH INSERTER. Price.....$0.50



NO. 622. PREPARED BORAX.
Flows even and perfectly, neither raises nor spatters. It is unnecessary to gum the work-block.
Price.....each, $0 10
" .....per doz., 1 00

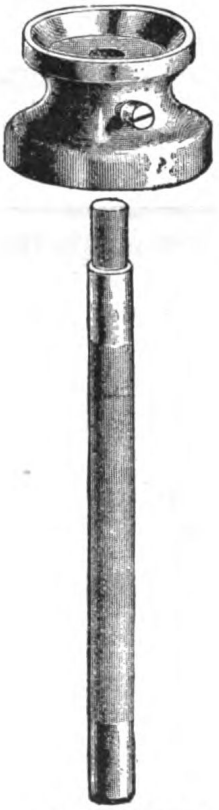


BORAX SLATES GROUND OUT.
No. 228. 5 in.....each, $0 25 No. 229. 6 in.....each, $0 30
No. 230. 7 in.....each, $0 40



NO. 227. BORAX CUP.
Made of hardwood, Veneered, with Figured Ground Glass Cup in Center, and Painted Tin Cover to protect it from dust.
Price.....each, $0 35

NO. 224. CHALK BOTTLE.
With Brush.....$0 25



REVERSIBLE BARREL OR RING CONTRACTOR.
No. 4112, ea., $0 50
" 4113, N'kel-plated, ea., 0 65

NO. 225. ARRICK'S BALANCE PROTECTOR.
Price.....$0 50

NO. 4114. BLUEING PANS FOR SCREWS.
Price.....$0 25

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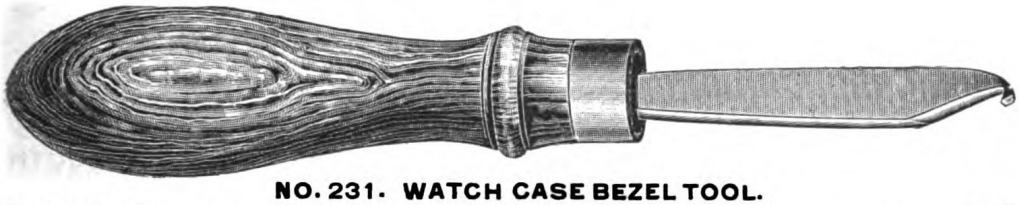
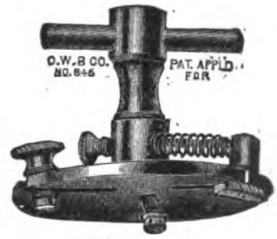
TOOLS B.



NO. 231. WATCH CASE BEZEL TOOL.

Price, extra quality.....$0 25

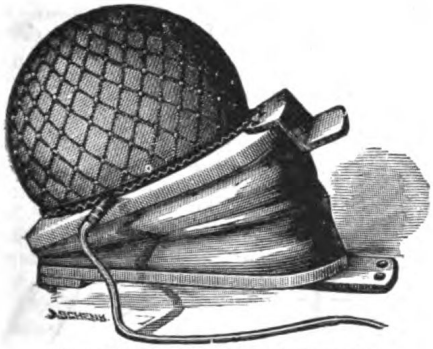


Cut 2-3 Size.

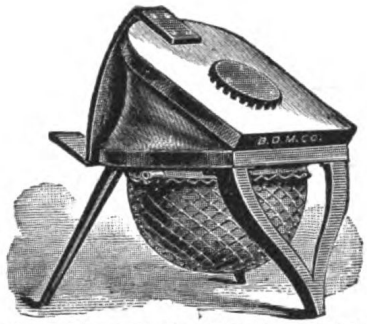
NO. 4115. NEW PEERLESS PATENT BEZEL CUTTER.

The most practical tool for the purpose yet produced. Will cut any standard size bezel. In using, adjust the two little guides to fit a trifle larger bezel than the one to be cut. Set the guides in the groove, pushing back the cutter at the same time, and place that in the groove also. While operating, hold the cutter firmly to prevent the guides from slipping out of the groove. Bezels can be more easily handled by leaving them upon the cases.

Price, nickel-plated.....$1 60



No. 232. FOOT BLOWER.



NO. 235. (New Style) FOOT BLOWER.

A rubber disc forms the air reservoir and equalizes the pressure. In three sizes as follows:

The following table to the right, will give an idea of the sizes of foot blowers, their capacity, and blast pressure:

	Size of boards.	Diameter of reservoir.	Pressure of blast per inch.	Cubic ft. of air per h'r.
No. 232 or 235. Foot Blower,	7¾x9	7¼ in.	1 lb.	190
" 233 or 236. Foot Blower,	10x11	9 in.	1½lbs.	330
" 234 or 237. Foot Blower,	11½x13¾	11 in.	1¾lbs.	625

The No. 232 bellows has a single disc. The No. 233 and 236 double, and the No. 234 and 237 treble discs.

PRICES OF FOOT BLOWERS.

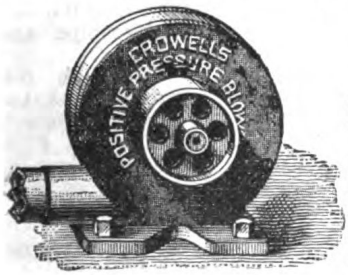
No. 232. Foot Blower.....$4.00
" 233. Foot Blower..... 5.00
" 234. Foot Blower..... 7.00

No. 235. Foot Blower.....$5.00
" 236. Foot Blower..... 6.00
" 237. Foot Blower..... 8.00

PRICES OF RUBBER DISKS, NETS AND TUBING.

No. 238. Extra rubber disks for No. 232 or 235, each, $0.50
" 240. Extra rubber disks for " 234 or 237, each, 1.00
Rubber hose, per foot..... 15

No. 239. Extra rubber disks for No. 233 or 236, each $0.75
" 241. Extra nets,.....each .35



NO. 242. CROWELL'S POSITIVE PRESSURE BLOWER OR ROTARY AIR PUMP.

These blowers are made now in four sizes, namely: Nos. 242, 243, 244, 245. And these sizes are in successful operation in many branches of business. Other larger sizes are in process of construction and will soon be ready for sale.

Some of the advantages of this Blower are: Very little power is required to run them. No counter-raft is required; can be run at a low speed direct from the main shaft. Gives a positive blast and will force air through the smallest aperture. Exceedingly simple in construction; no delicate part to get out of order. The cheapest and the best. Equal in capacity to larger ones of other makes. For Blow Pipe or Gas Furnace they have no equal. Will give any desired pressure up to 10 pounds.

NO. 242.
NET. CASH NO DISCOUNT.

LIST OF PRICES AND DIMENSIONS.

No. of Blower	Price of Blower.	Price of Air Tank and Valve.	Price of Iron Table.	Diameter of Cylinder.	Diameter of Pulleys.	Face of Pulleys.	Revolutions per minute.	Horse-power Required.	Weight of Blower.	Cubic Inches Delivered Per Revolution.
242	$16 50	$12 00	$13 50	4½ in.	3 in.	1 in.	600	⅛	16 lb.	15 in.
243	22 00	12 00	13 50	6 in.	4 in.	1½ in.	500	¼	30 lb.	40 in.
244	33 50	12 00	13 50	8 in.	5 in.	2 in.	400	½	75 lb.	90 in.
245	44 00	12 00	13 50	8 in.	5 in.	3 in.	300	1	115 lb.	210 in.

The air tank is not always used. There are many Blowers now running without the tank. But when a steady and well regulated blast is needed of a certain pressure, by using a tank or reservoir, the valve on same can be set to give that desired pressure, and will regulate it same as a safety valve regulates a steam boiler.

Full Directions with the Blower.

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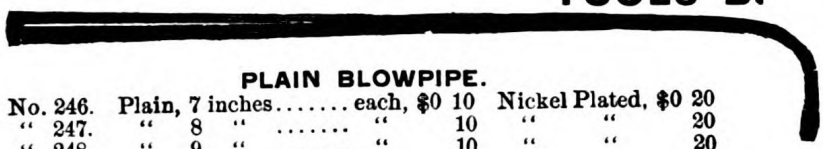
TOOLS B.

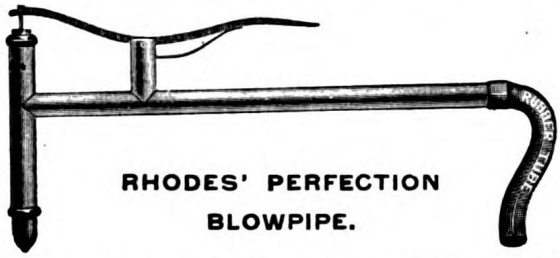


PLAIN BLOWPIPE.

No. 246.	Plain, 7 inches	each, $0 10	Nickel Plated,	$0 20
" 247.	" 8 "	" 10	" "	20
" 248.	" 9 "	" 10	" "	20
" 249.	" 10 "	" 15	" "	25
" 250.	" 11 "	" 15	" "	25
" 251.	" 12 "	" 20	" "	30

BLOWPIPE, WITH BALL AND JOINT.

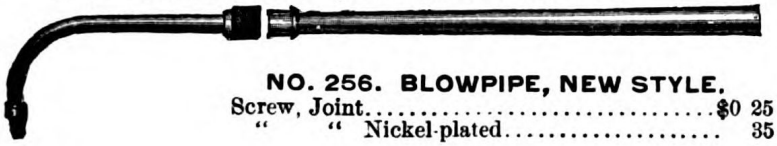
No. 252.	8 inches	each, $0 15.	Nickel-plated,	$0 25
" 253.	9 "	" 20.	"	30
" 254.	10 "	" 20.	"	35



RHODES' PERFECTION BLOWPIPE.

This blowpipe can be used the same as any ordinary blowpipe. Or what will be found still better is the use of a bellows operated by the foot, attaching the rubber pipe as shown in cut.

No. 255.	For Jewelers and Watchmakers....	Brass, $0 85-	Nickel, $1 00
" 4116.	For Dentists, Assayers, Electricians,	" 1 75.	" 2 00
" 4117.	The Jumbo, for Bicycle Repairers, Machinists, etc.....		2 50



NO. 256. BLOWPIPE, NEW STYLE.

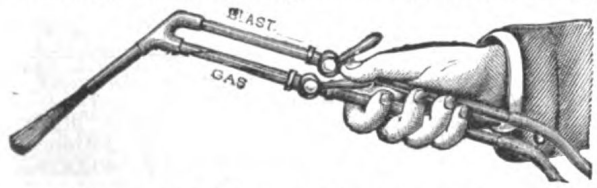
Screw, Joint.....$0 25
" " Nickel-plated..... 35

BLOWPIPE, TWO SIZE FLAME.

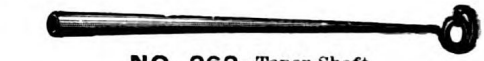
No. 257.	New Style, single flame.....	each, $0 25.	Nickel Plated, $0 40
" 258.	" double "	" 35.	" " 50

NOS. 259, 260 AND 261. BRAZING BLOWPIPES.

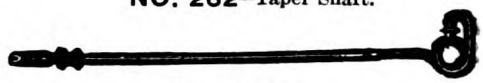
For brazing work requiring great heating power. No. 259 is the same size as illustrated, but without stopcocks. No. 260 is furnished with stopcocks. The stopcocks are both under perfect control of the thumb of the hand which holds the blowpipe. The air jet of No. 259 and No. 260 is 1/8-inch. No. 233 Foot Blower is required for the full power of these blowpipes. No. 261 is a larger pattern of No. 260. It has a 1/4-inch air jet, and will use all the gas supply from a 1/2-inch pipe. It requires a No. 234 Foot Blower.



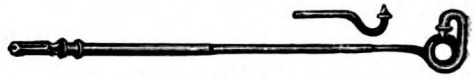
No. 259. Blowpipe (without stopcocks).....$1 75
" 260. " with two lever stopcocks, as in engraving..... 2 50
" 261. " large size, with two cocks..... 3 00
" 261½. " largest size, " " " 5-16 inch air jet, 7-16 inch gas opening. Requires 1/4-inch gas supply, pipe and top..... 4 25



NO. 262—Taper Shaft.



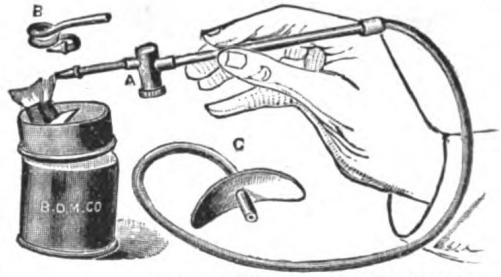
NO. 263.



NO. 264. HOT BLAST MOUTH BLOWPIPE.

Specially designed for Jewelers, Dentists, Chemists, etc. This has nearly double the power of the old mouth blowpipe.

No. 262. Taper Shaft, brass...$0 65
No. 263. Straight Shaft, with hard rubber mouthpiece 75
No. 264. Folding in case, 5½x1¼x½ in., with both hot and cold blast jets..... .....1 00
No. 265. Hard Rubber Mouthpiece, separately..... .. 20
Extra for Nickel-Plating each, 15



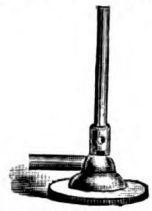
NO. 266. FLETCHER'S NEW PATENT BLOWPIPE.

The whole arrangement of this is totally different from that of any blowpipe yet made. The mouthpiece is, of all, the easiest to use, and the heaviest continued blowing causes no strain on the lips, whilst the tongue has the necessary control over the opening.

The engraving shows it in connection with the blowpipe lamp for tallow.

No. 266. With both cold blast and patent hot blast, two jets, nickel-plated mouthpiece, in case..... $1 50

No. 267. Mouthpiece alone, for use with other blowpipes, $0 60



BUNSEN BURNER.

No. 298. The admission of air is controlled by a thimble, which can be turned to entirely exclude the air. The inside diameter of the burner is 5-16 inch; height, 5 inches.

Gas consumption about three feet per hour. Price.....$1 00

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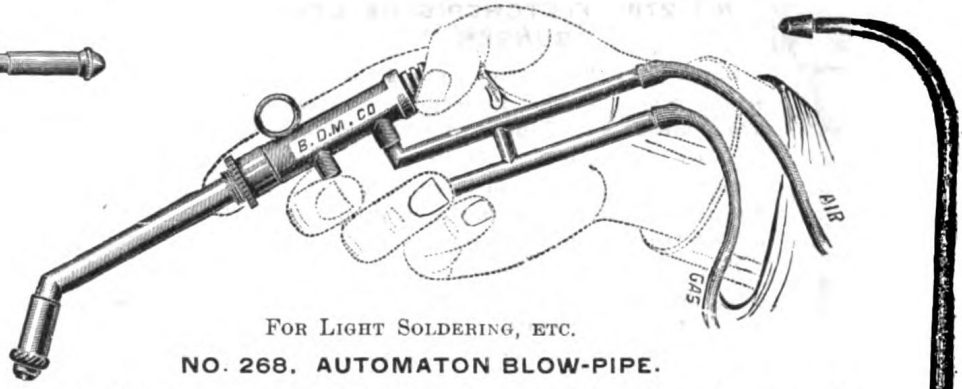
NO. 300. AUTOMATON HAND BLOW-PIPE.

The engraving shows the hand blow-pipe with both tubes underneath, which will be found a most convenient pattern for small work, brazing, annealing, etc. The No. 300 is of the same size as the No. 269 and requires a ⅜ bore gas pipe and tap. No. 301 requires for its fullest power a ½-inch clear bore gas pipe and tap, and is adapted for the heaviest brass finishers' and bicycle makers' work.

No. 300 requires Foot Blower No. 232. No. 301 requires Foot Blower No. 234.

For Blowers see page 15.

No. 300 Blow-Pipe $3 50
No. 301 " 5 00

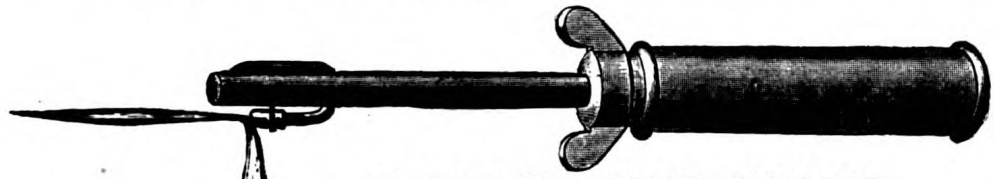


For Light Soldering, etc.

NO. 268. AUTOMATON BLOW-PIPE.

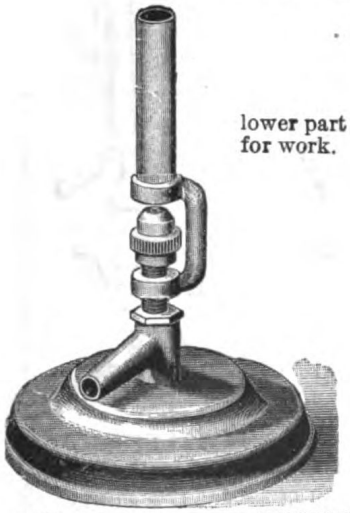
The illustration shows this blow-pipe one-third size. A spring opposes the movement of the hand, and a slight variation of pressure upon the end piece, when it is held as shown, is sufficient to give either a pointed jet or a full-sized brush of flame at pleasure. An improved tip is used on the air jet, and the small blue-pointed reducing flame is very easily and perfectly produced. The gas passage does not close entirely, but allows the passage of enough gas to prevent the flame from going out when the blow-pipe is not in use. With the No. 235 Foot Blower, this blow-pipe is believed to form the most convenient apparatus for soldering dental plates which has yet been produced. A reducer is furnished with it free of charge, by which the small rubber tubing used with the blow-pipe can be connected with the larger tubing which fits the bellows nozzle.

No. 268. Blow-Pipe.....$3 00
No. 235. New style Foot Blower (see Page 15)..... 5 00
Rubber Tubing, for connection, per foot..... 15



NO. 275. NEW ALCOHOL BLOW-PIPE.

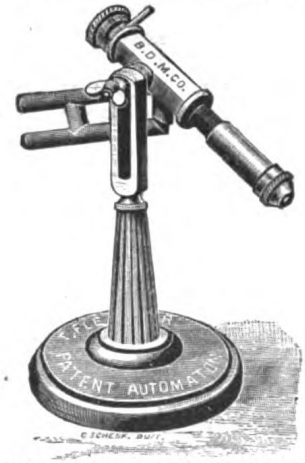
Made of Polished Brass; is entirely harmless and can be used by Jewelers and Watchmakers; gives a very fine, large flame. Fill lower part two-thirds full of alcohol; hold it over a spirit lamp a few minutes, and it is ready for work. No. 275. Price.....each, $1 00. No. 276. Largest size....each, $2 25



NO. 296, 5 G. ADJUSTABLE BUNSEN

For burning gas of variable quality. In this burner the size of the orifice through which the gas escapes is adjusted by turning the milled cap-nut seen inside the arm which supports the upright tube. The air supply is adjusted by screwing the arm up or down, it being threaded and moving upon the stem which passes through its lower end. It follows that any desired quantity of flame can be produced with it.

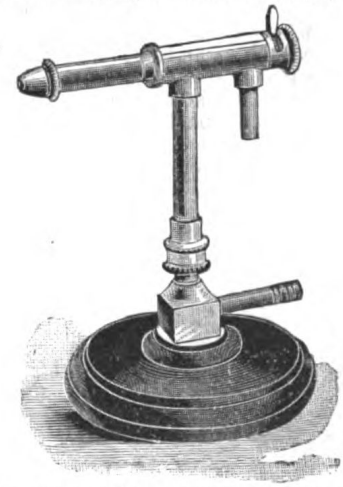
No. 296, 5 G, on iron base.....$1 00
No. 297, 5 H, on brass base, turned and polished..... 2 00



NO. 270. AUTOMATON BLOW-PIPE, ON STANDARD.

The swivel gives even greater latitude of adjustment than No. 269 is capable of, while the blow-pipe is easily detached and capable of use in the hand.

No. 270, 6 D, on Standard, $4 00
No. 271, 6 E, larger size... 5 00
No. 270 requires Blower No. 236.
No. 271 " " " 237.



NO. 269. AUTOMATON BLOW-PIPE.

Automaton Blow-Pipe on stand, as engraved, for jets not exceeding ⅛-inch bore, complete with one jet.

Price $4.00
Extra jet, any size to ⅛-inch bore 10

No. 269 requires Blower No. 236.

For Blowers see page 15.

NO. 4118.
Brass Blow-Pipe with bone mouth-piece. 25c
No. 4118. Nickel-plated 40c
Tips only.....10c

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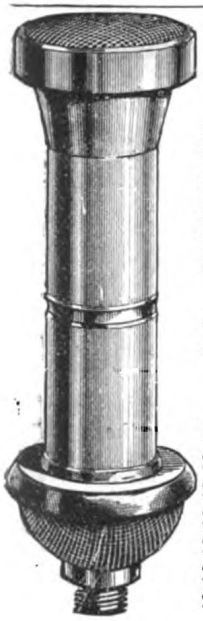


NO. 278. FLETCHER'S SAFETY BUNSEN.

Burners are frequently required for limited spaces where no side projection is possible. They are made in three sizes, all in brass, polished. The gauze slides in, and in case of accident can be replaced in a few seconds. The number gives the maximum gas consumption in cubic feet per hour at $\frac{1}{10}$ pressure.

If a number are placed together, on a tube or ring, they must be at least one-fourth of the diameter of the top apart.

Brass stands are supplied when desired.

No.		Diam. across top of Gauze.	Height.	Each.
278.	5SB. without stand..	⅞ in.	3¾ in.	$0 65
279.	10SB. without stand..	1¼ in.	4¾ in.	85
280.	14SB. without stand..	1½ in.	6 in.	1 10
281.	5SBM. on brass stand..	⅞ in.	4¾ in.	1 25
282.	10SBM. on brass stand..	1¼ in.	5¾ in.	1 50
283.	14SBM. on brass stand..	1½ in.	7 in.	2 00

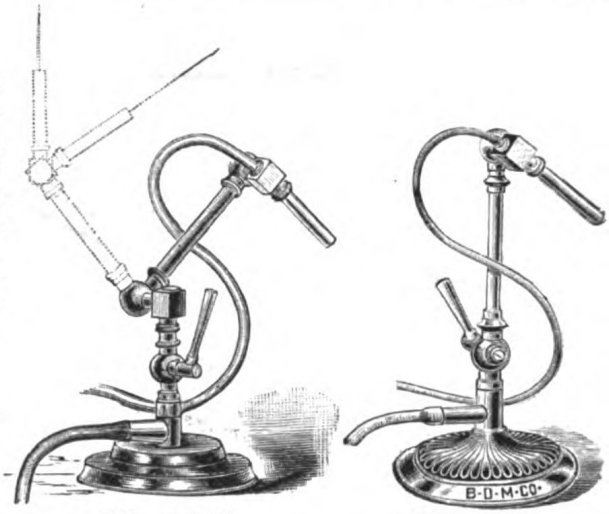
NO. 284. FLETCHER'S BUNSENS.

FLETCHER'S BUNSENS.—These are the ordinary brass tube Bunsen, with Fletcher's quieting jet. The number gives the maximum gas consumption in cubic feet per hour at $\frac{1}{10}$ pressure.

All have air slides; these enable the smaller sizes to be used with a blow-pipe, without the necessity of a loose internal tube.

Brass stands ONLY are supplied. The objectionable nature of iron stands on a laboratory table is too well known to need any remark.

		Size of Tube outside.	Height.	Price.
No. 284.	3 FB without stand..	⅜ in.	3½ in.	$0 52
No. 285.	5 FB without stand..	7/16 in.	4¼ in.	30
No. 286.	6 FB without stand..	½ in.	5 in.	35
No. 287.	8 FB without stand..	⅝ in.	6 in.	40
No. 288.	12 FB without stand..	¾ in.	7 in	60
No. 289.	3 FBM on brass stand..	⅜ in.	4½ in.	75
No. 290.	5 FBM on brass stand..	7/16 in.	5¼ in.	80
No. 291.	6 FBM on brass stand..	½ in.	6 in.	90
No. 292.	8 FBM on brass stand..	⅝ in.	7 in.	1 10
No. 293.	12 FBM on brass stand..	¾ in.	8 in.	1 50

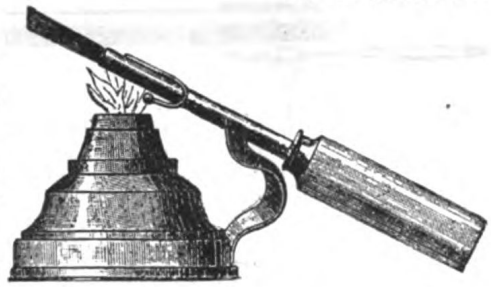


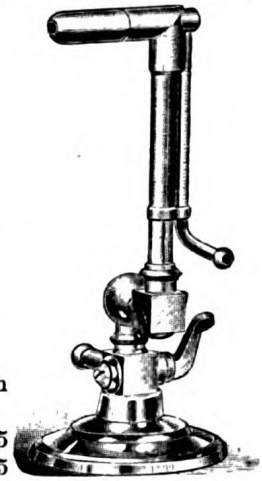
NO. 298½. NO. 299.

NO. 298½. IMPROVED HERAPATH BLOW-PIPE.

Either of these blow-pipes can be used in connection with the No. 282 Foot blower, or with a blast from the mouth. In the latter case, a mouth-piece is required. One properly designed, which can be held between the teeth, leaving both hands free for the management of the work, with a shield-piece to support the lips, is illustrated by cut No. 266.

No. 298½. Improved Herapath Blow-Pipe.... Price, $3 75
No. 299. " " " " 3 00
Metal Mouth-piece, with shield to sustain the lips (See No. 266)..... 60





NO. 277. NEW ALCOHOL BLOW-PIPE AND LAMP.

This is the same as No. 275, but comes with lamp as shown in cut.

Price..... each, $1 75
No. 277½ larger..... " 2 25

NO. 274.

NO. 273.

NOS. 273 AND 274.

GAS BURNER FOR JEWELERS DENTISTS, ETC.

This burner is an admirable substitute for the alcohol lamp. It will be found very convenient for general heating purposes. This lamp is so constructed that it burns gas with a blue flame without smoke, and gives an intense heat.

No. 273. Laboratory Gas Burner $0 50
No. 274. " " with spider, 75

NO. 294. JEWELERS' AND DENTISTS' BLOW-PIPE.

Polished and nickel-plated throughout; the handsomest blow-pipe made. The gas inlet is placed in line with the air jet for convenience of attachment with gas opening at back of work bench. The flame can be directed at any angle. The tap lever, when pushed backward, will turn the light out; when drawn forward, will leave a small pilot light. Total height, 7¼ inches. Air can be supplied by the mouth or by a foot blower.

No. 294—4 B.

Blow-pipe, polished and nickel-plated. Price.....each, $4 50

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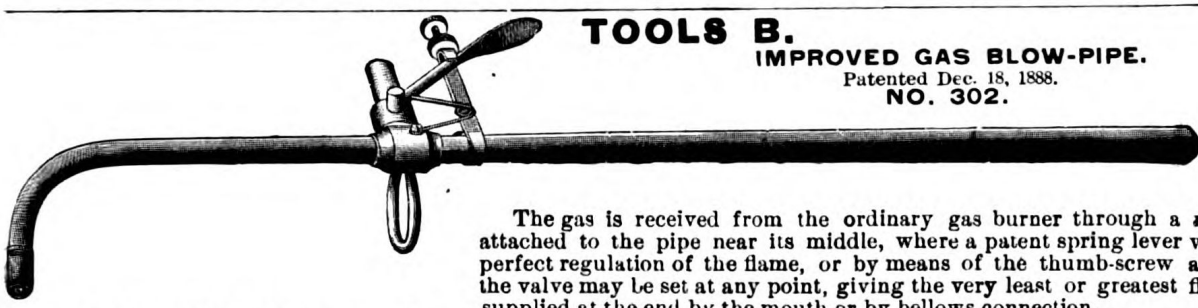
TOOLS B.



IMPROVED GAS BLOW-PIPE.

Patented Dec. 18, 1888.

NO. 302.

The gas is received from the ordinary gas burner through a rubber tube attached to the pipe near its middle, where a patent spring lever valve affords perfect regulation of the flame, or by means of the thumb-screw and jam-nut the valve may be set at any point, giving the very least or greatest flow. Air is supplied at the end by the mouth or by bellows connection.

No. 302. Full Nickeled, complete with rubber tubing....Price, $3 50 Larger or smaller Air Tips.....each, $0 20

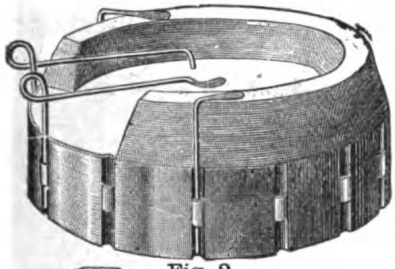


Fig. 2.

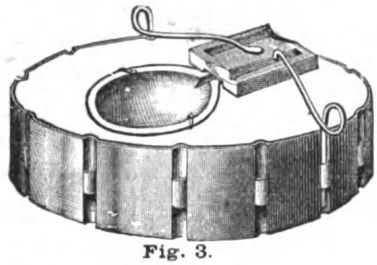


Fig. 3.

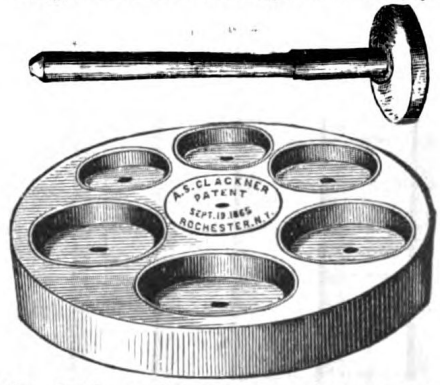
Fig. 5.

NO. 303. BLOW-PIPE PAD.

Patented March 6, 1889.

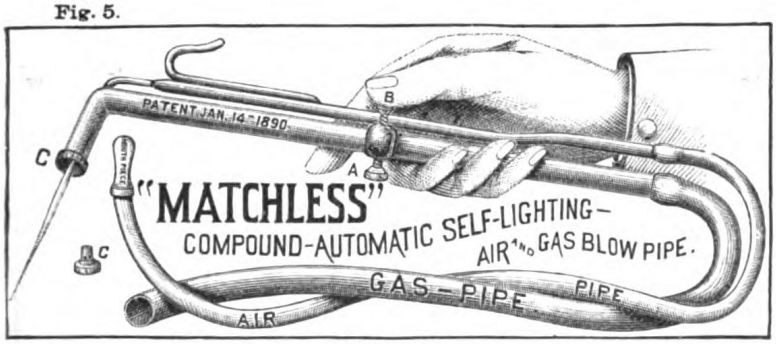
Showing the different positions for its use. Figure 2 shows the pad; Figure 5 shows handle; Figure 3 shows ingot mold and melting cup. Directions come with each box.

No. 303.	Complete, including Removable Rims, Ingot Mold, Melting Cup and 5 Clamps	$2 00
No. 304.	Without Mold and Cup	1 50
No. 305.	Ingot Molds.....each,	0 50
No. 306.	Extra Melting Cups, ea., 10c; per ½ doz.	0 50
No. 307.	Removable Rims.....each,	0 25



NO. 221. BARREL CONTRACTOR.

Price.....each, $1 25
" Nickel-plated..... " 1 60



NO. 308

Will produce any sized flame from a *large brush* to one marvelously fine and needle-pointed. Air Pipe and Mouth Piece are furnished for convenience.
Price.....each, $2 50

NO. 315. NO. 316. NO. 317. NO. 314.

GLASS MATERIAL BOTTLES.

NO. 315.	NO. 316.	NO. 317.	NO. 314.
Doz..$0 20	Doz..$0 25	Doz..$0 25	Doz..$0 30
Gross, 2 00	Gross, 2 50	Gross, 2 50	Gross, 3 25

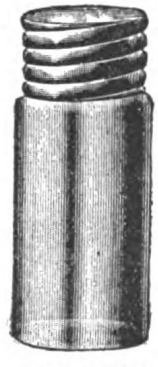
NO. 312. UNIVERSAL BEAT BLOCK.

For English, Swiss or American Watches.
Price .....each, $0 75

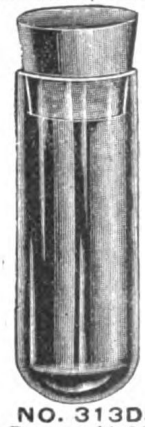
NO. 313.
Doz....$0 30
Gross... 3 25

NO. 313A.
Doz....$0 30
Gross.. 3 25

NO. 313B.
Doz....$0 35
Gross... 3 50



NO. 313C.
Doz....$0 35
Gross... 3 50



NO. 313D.
Doz....$0 30
Gross.. 3 00

MATERIAL BOTTLES.

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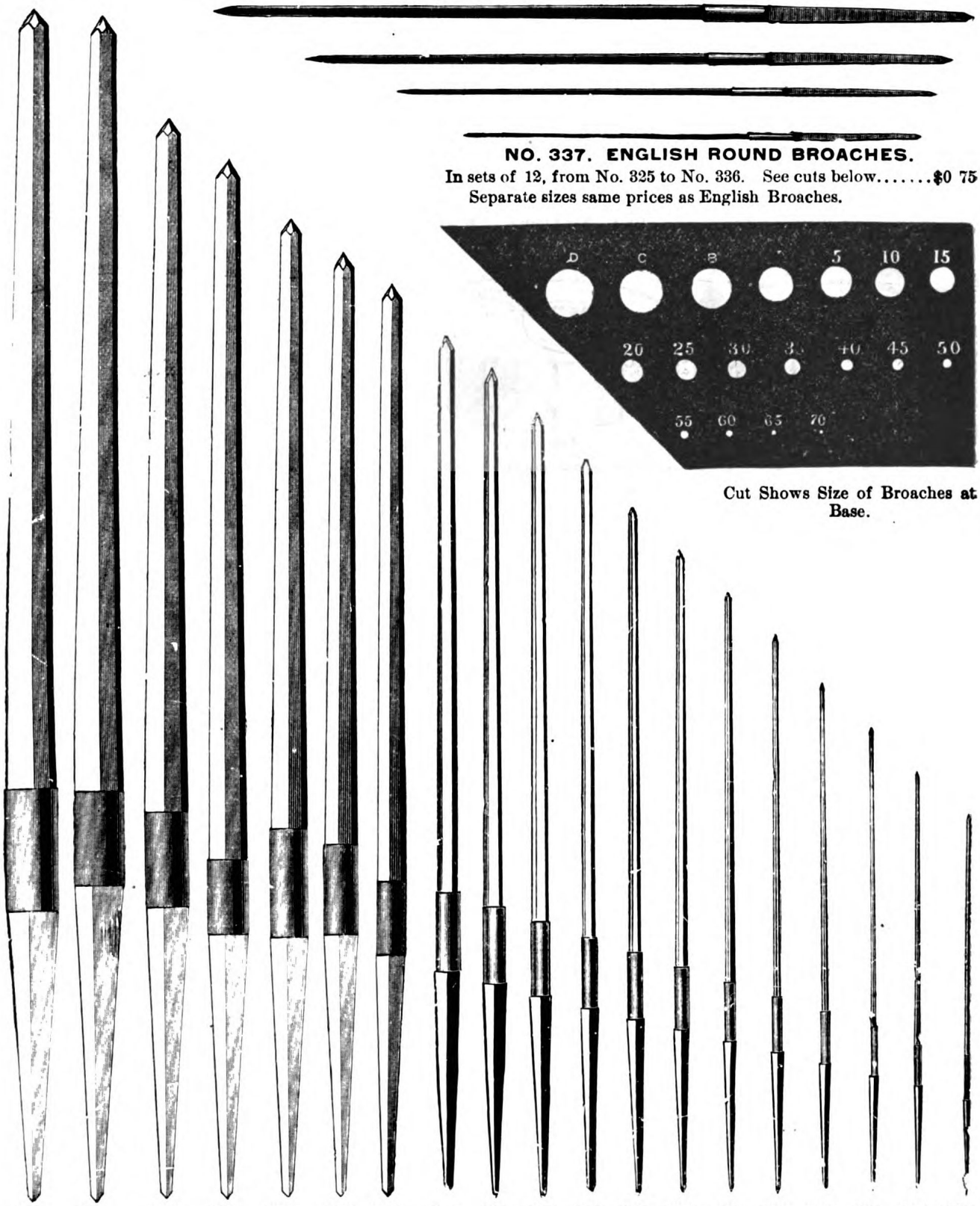
TOOLS B.



NO. 337. ENGLISH ROUND BROACHES.

In sets of 12, from No. 325 to No. 336. See cuts below.....$0 75
Separate sizes same prices as English Broaches.

Cut Shows Size of Broaches at Base.

	318.	319.	320.	321.	322.	323.	324.	325.	326.	327.	328.	329.	330.	331.	332.	333.	334.	335.	336.
Ea.,	$0 30	$0 30	$0 25	$0 20	$0 18	$0 18	$0 18	$0 18	$0 15	$0 12	$0 10	Doz.							
Doz.	3 25	3 00	2 75	2 50	2 25	2 10	2 00	1 85	1 50	1 25	1 00	$0 60		331 to 336....per doz., $0 45					

ENGLISH BROACHES.

Cuts are full size. In sets of 12, No. 325 to 336.....$0 75

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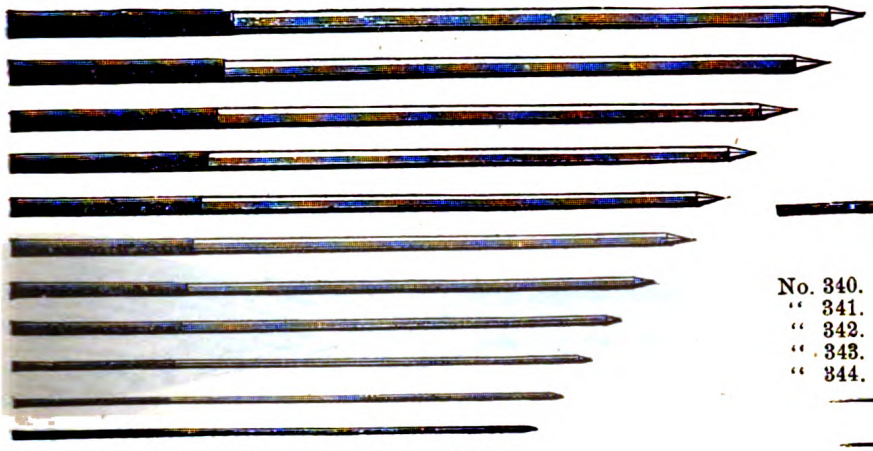


NO. 338. SET OF SWISS BROACHES.
In sets of 12, as above.....per set, $0 35

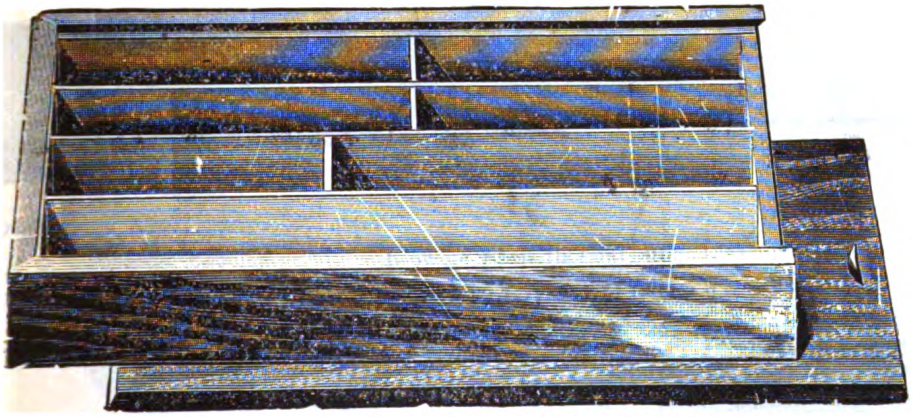
NO. 0.

NO. 6. PIVOT BROACHES.
Assorted Nos. 0 to 6.

No. 340.	Swiss.....	per doz.,	$0 15
" 341.	" Fine.....	"	25
" 342.	English Pivot, Extra Fine,	"	40
" 343.	" Round.....	"	40
" 344.	Swiss, " Fine.....	"	30

NO. 345. DIAMOND BROACHES.
Per set of 4.....$0 40

NO. 339. JOINT BROACHES.
Swiss assorted.....per doz., $0 15

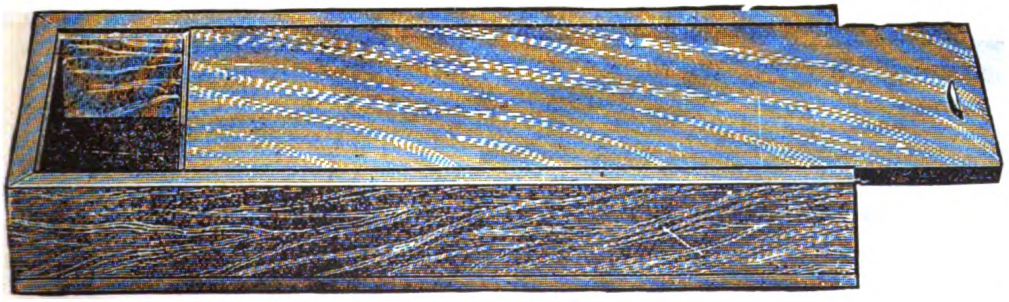


MAHOGANY BROACH BOX WITH SEVEN DIVISIONS.

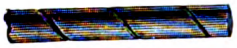
No. 346.	Mahogany, 7 partitions	$0 30
" 347.	" 9 "	40

NO. 355.
1-16 inch.
Price per foot ..$0 05

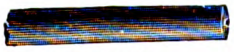
NO. 356.
2-16 inch.
Price per foot.....$0 06



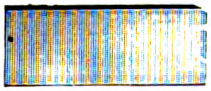
MAHOGANY BROACH BOX.
No. 348. Small, $0 10. No. 349. Medium, $0 15. No. 350. Lrg., $0 20. No. 351. Ext. Lrg., $0 25



NO 357.
3-16 inch.
Price per foot $0 09
Above 3 are twisted.
Rawhide, same price.



NO. 358.
¼ inch.
Round. Price per ft. $0 09



NO. 359.
Flat. Price per ft., $0 06
Twisted round and flat Belting.

	No. 352.	No. 353.	No. 354.
Belt Hooks ..... per pair,	$0 15	$0 20	$0 25

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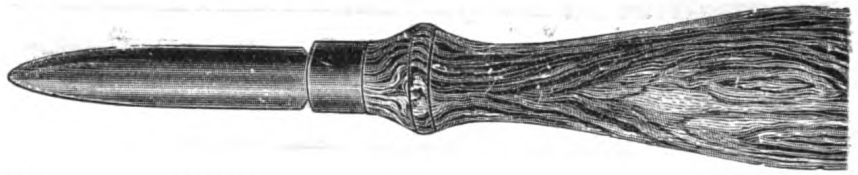
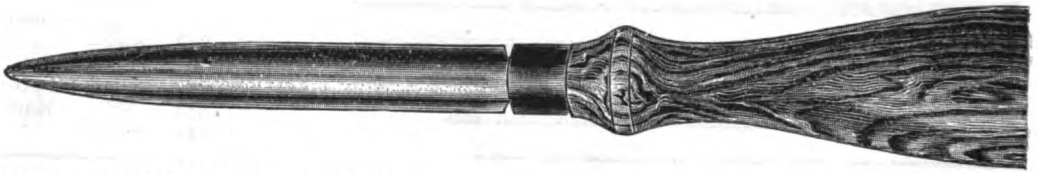
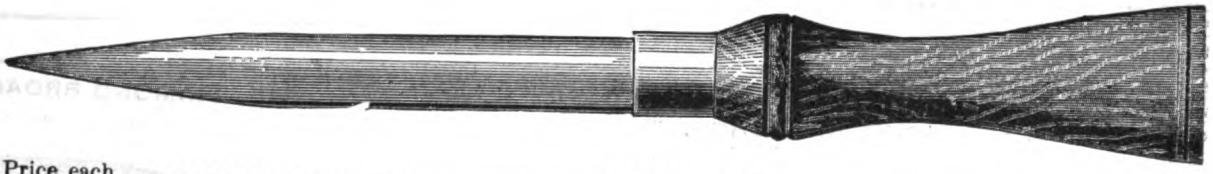
TOOLS B.



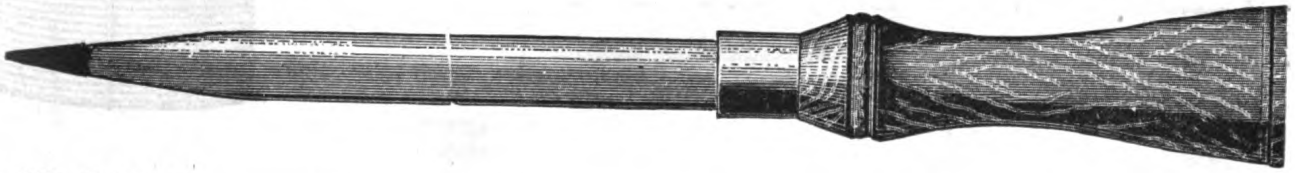
No. 360. Price each..... $0 30



No. 361. Price each..... $0 35



No. 362. Price each..... $0 40



No. 363. Price each..... $0 50

Cuts of Steel full size, handles are half size Rosewood.

BURNISHERS BEST QUALITY ENGLISH STEEL.

NO. 364. STRAIGHT, SLIM BURNISHER.

Rosewood handle, price each..... $0 35

NO. 365. SLIM BENT BURNISHER.

Rosewood handle, price each..... $0 35

NO. 366. EXTRA QUALITY JEWEL BURNISHER.

Cut Two-thirds size.

Black polished handle, price each..... $0 40

The above Burnishers are made of fine steel, with mirror surface.

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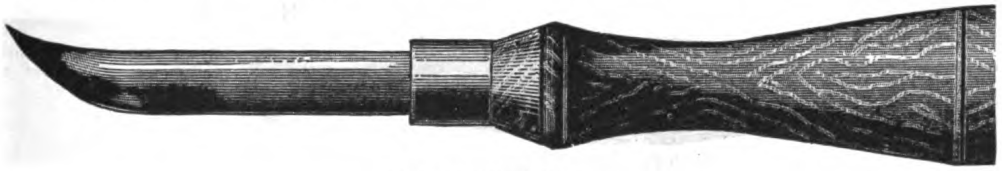
TOOLS B.

NO. 367—Full size.

Spoon Burnisher.....Price each, $0 35

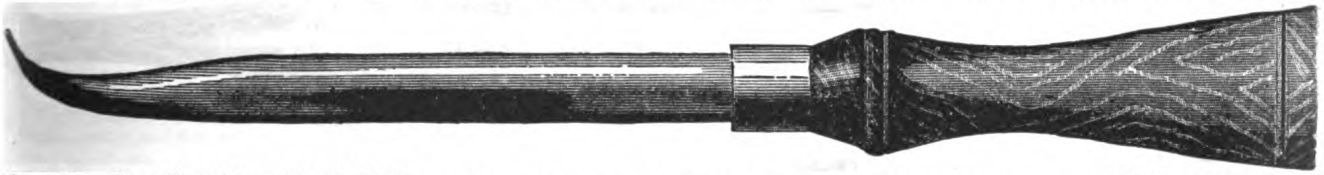
NO. 368—Full size.

Bent Burnisher.....Price each, $0 35



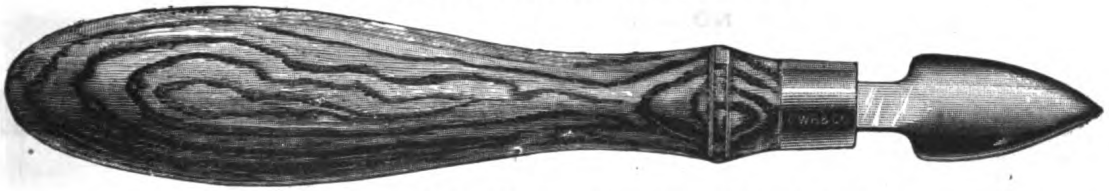
NO. 369—Full size.

Bent Burnisher.....$0 35



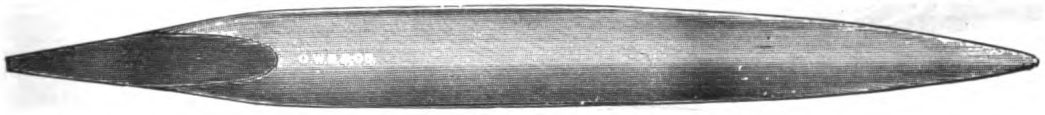
No. 370. Bent Burnisher, 3 inch Blade.....Price each, $0 40
No. 371. " " 4 " " ..... " 50

BEST QUALITY STEEL BURNISHERS.



EXTRA FINE BURNISHER. ROSEWOOD HANDLE.

No. 372. New Burnisher.....Price each, $0 60



BURNISHER—Full size.

No. 373. Finest quality steel, not handled.....Price each, $0 50

BURNISHER—Full size.

No. 374. Finest quality steel burnisher, not handled.....Price each, $0 40

BURNISHER—Full size.

No. 375. Finest quality, not handled.....Price each, $0 25

Cut is full size.

BURNISHER, JEWEL.

No. 376.....Price each, $0 15

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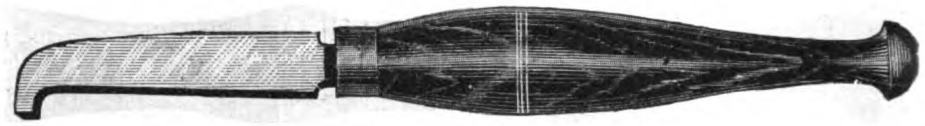
TOOLS B.



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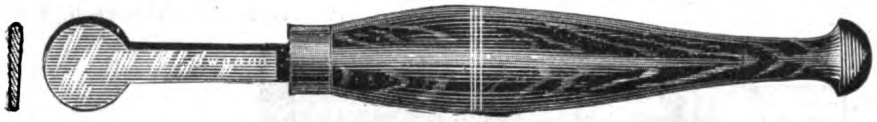

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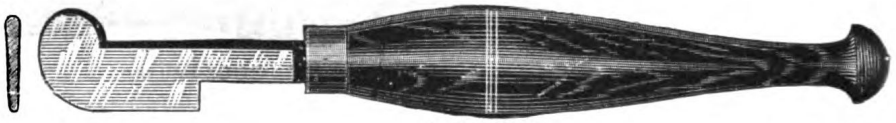

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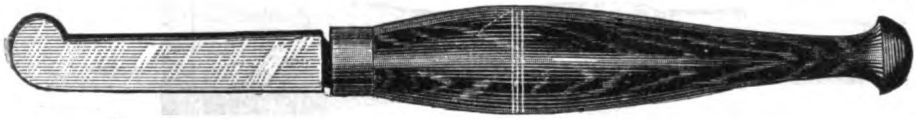
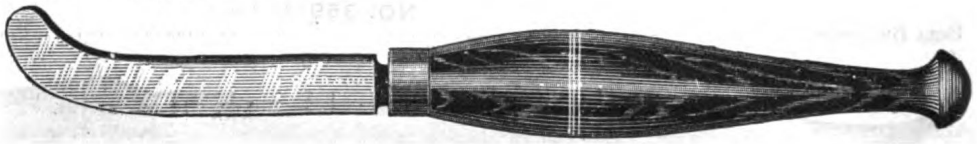


NO. 379



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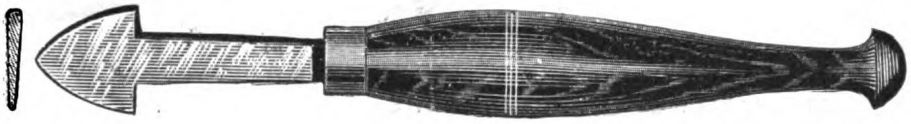

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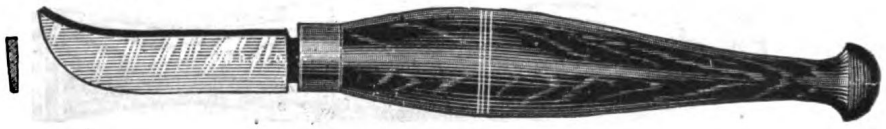

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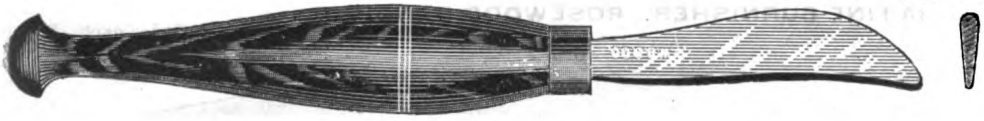

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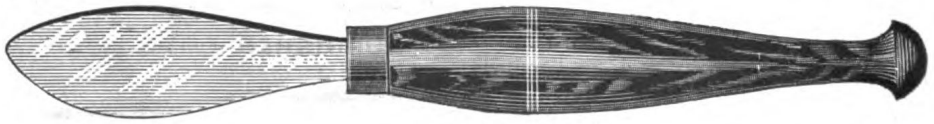

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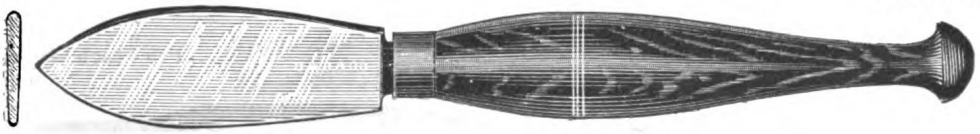

NO. 385.

PLATERS' BURNISHERS.

Cuts all one-half size. Extra fine, mirror surface. Price—Maple handles, each, $0 75; Rosewood handles, each, $0 85

In ordering, designate by number, as there are 17 different patterns of this make.

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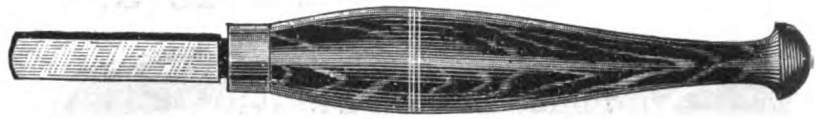
TOOLS B.



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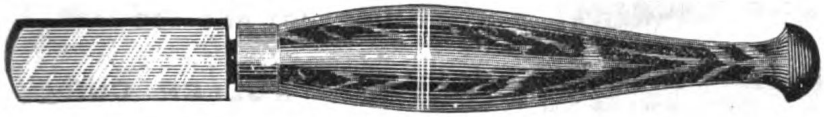

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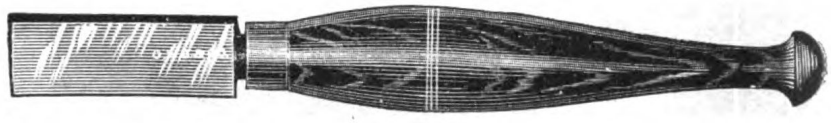

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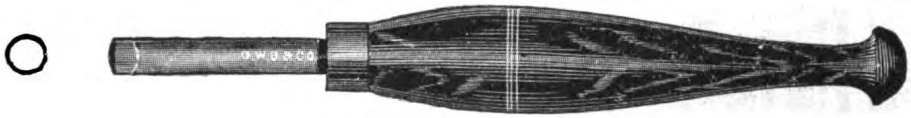

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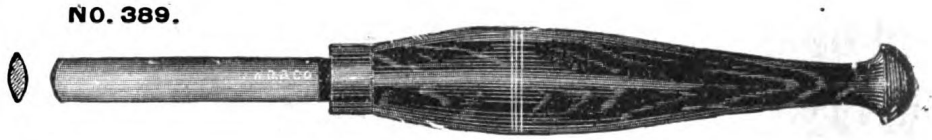

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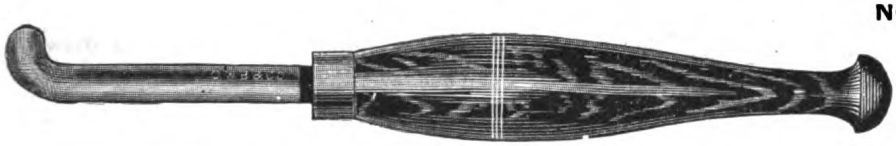

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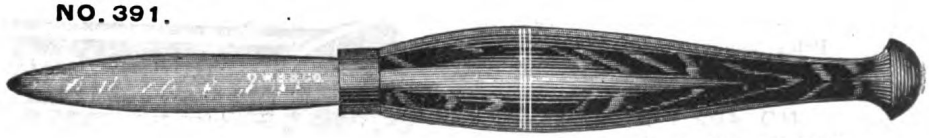


No. 392. Cuts all one-half size.

No. 393.

Something new.

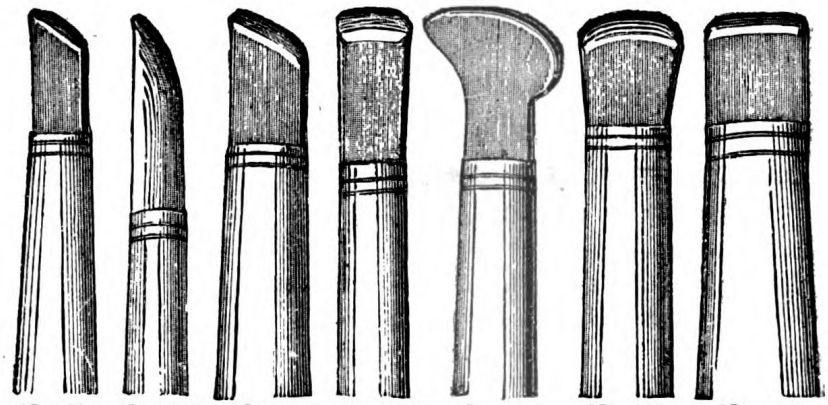
CASE OR PLATE BURNISHER.

Price each, $0 50

PLATERS' BURNISHERS.

Extra fine, Mirror surface, Warranted. Seventeen different Patterns, hand-forged steel.

Price—Maple handles, each, $0 75; Rosewood handles, each, $0 85



No. 394. No. 395. No. 396. No. 397. No. 398. No. 399. No. 400.

Cut is one-half size.

VIENNA BLOODSTONE BURNISHERS.

Agate, price each, 85 cents. Bloodstone, price each, $1 10.

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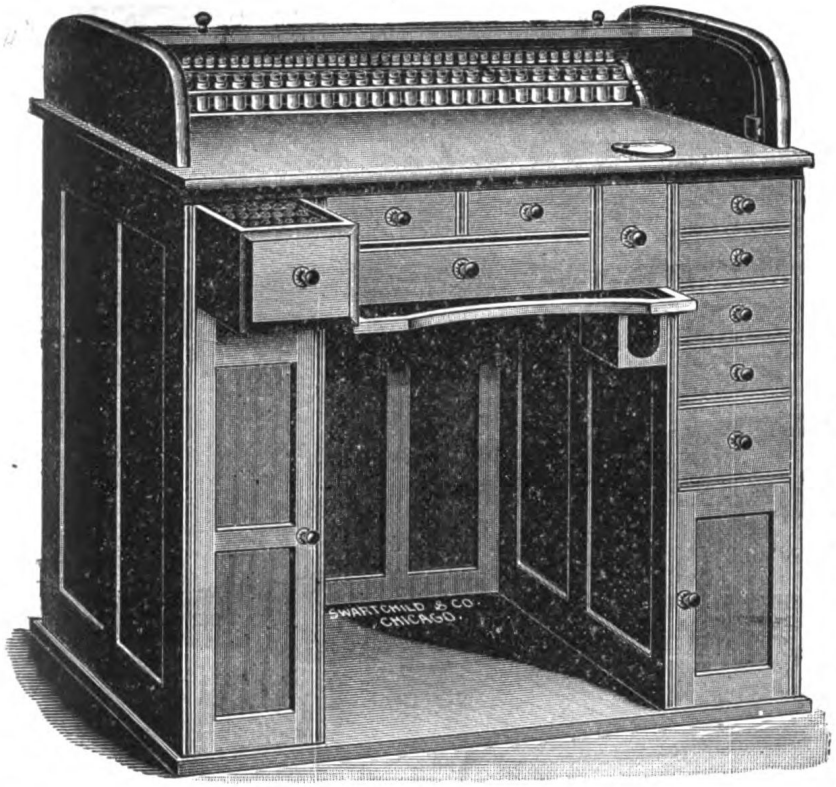
TOOLS B.



NOS. 401 AND 402.

NOVELTY ROLLER CURTAIN TOP BENCH.

Made in solid oak or walnut, extra finished and highly polished and paneled, with best of gilt trimmings and our novelty material cabinet as shown in cut. Both ends of the elevation on the bench are made to fold down and form an extension to the bench when in use. By an automatic arrangement, when curtain is drawn all drawers are locked, and your tools and materials are safely secured. Length of bench, forty-four inches; height, forty inches and twenty-six inches wide; contains nine drawers for tools, one chuck drawer, one large closet for liquids, etc., one foot-wheel closet, one apron drawer, one chalk drawer and one reversible vise rest.

No. 401. Price, complete as shown, with cabinet.....$23 75
No. 402. Price, bench without cabinet..... 21 00

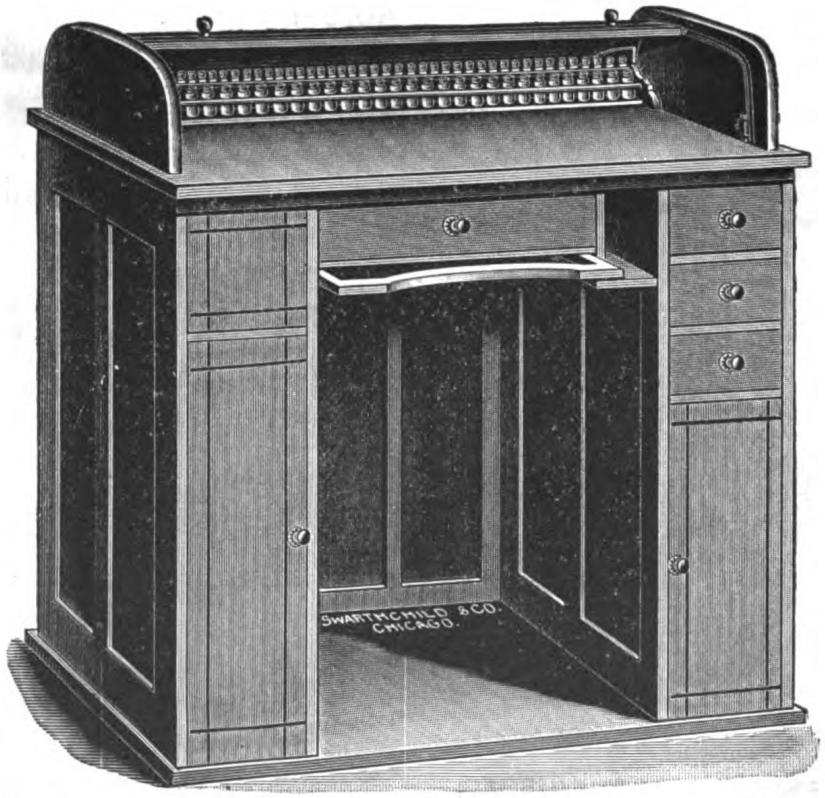
NO. 402 1-2.

Same style and size as above, made from best seasoned birch wood, oak, cherry or walnut finish, gilt trimmings.
Price, complete as shown, with cabinet.....$19 75
Price, without cabinet..... 17 00

NOS. 403 AND 404.

NOVELTY ROLLER CURTAIN TOP BENCH.

Made from the best seasoned birch wood, oak, cherry or walnut finish, gilt trimmings, and our novelty material cabinet as shown in cut. This bench is the same in height, length and width as No. 401, with revolving top. It has four drawers, one apron drawer, one large closet for liquids, one foot-wheel closet and one chalk division.



No. 403. Price, complete as shown in cut. $17 75
No. 404. Price, bench without cabinet..... 15 00

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TOOLS B.

No. 405. SWARTCHILD'S NEW NOVELTY WATCH MATERIAL CABINET.

Price complete, as shown above..... $2 75

Nos. 406 and 407.

SWARTCHILD'S IMPROVED WATCHMAKERS' BENCH.

This bench is made in well-seasoned birch wood. Cherry or oak finish, gilt trimmings and first-class workmanship. It has six drawers graduated in size, one apron drawer, one large closet drawer, one chalk division. Length, forty inches; height, forty inches, and twenty inches wide.

No. 406. Bench without cabinet, as shown in cut 9 00
No. 407. Complete, as shown, with cabinet....$11 75

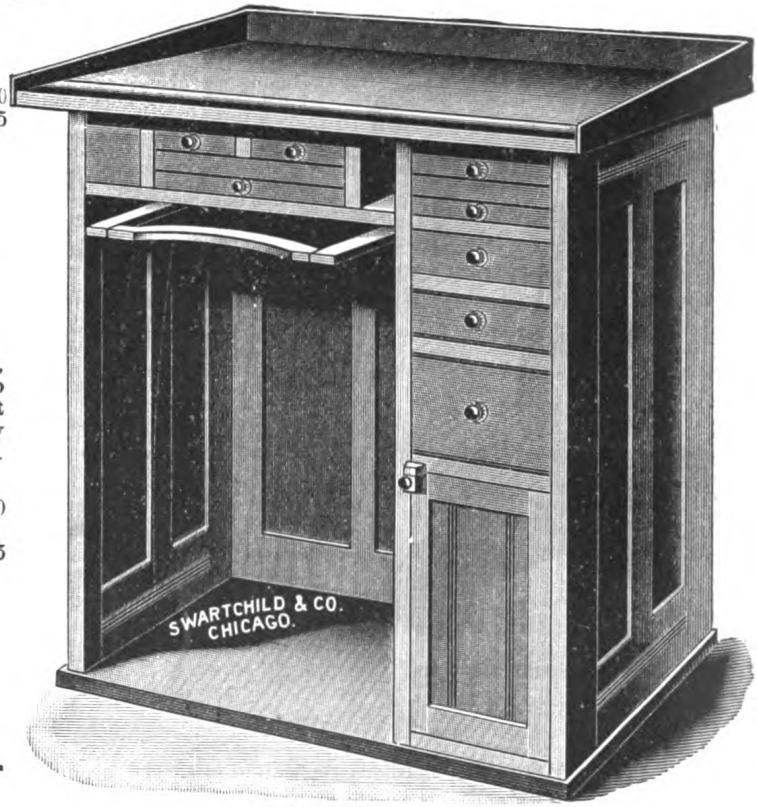
SWARTCHILD'S IMPROVED WATCHMAKERS' BENCH.

Made in solid walnut or oak. Handsomely paneled, gilt trimmings, eight drawers graduated on sizes to suit all kinds of tools, one chalk division, one closet drawer and one apron drawer. Length of bench, forty inches; height, forty inches, and twenty inches wide.

No. 408. Bench, as shown in cut $11 50
No. 409. Bench, as shown in cut, including our improved 100-bottle material cabinet, 14 25

SWARTCHILD & CO.

Manufacturers of these Benches.



Nos. 408 and 409.

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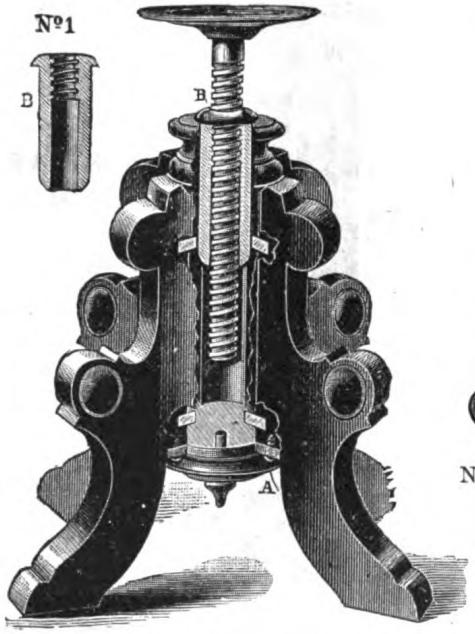
Our Watchmakers', Jewelers' and Engravers' Stools.

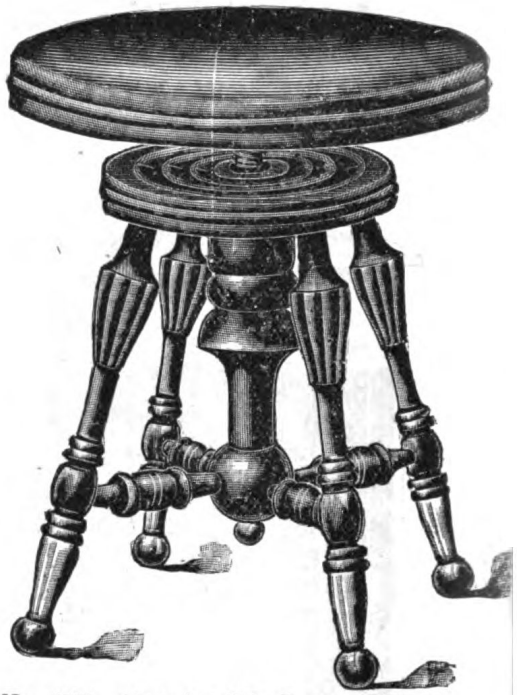
No. 4120. Pedestal copper finished, round polished seat, 14¼ in., price each..... $2 75

New Departure, twisted wire pedestal.



The above cut represents a sectional view of a Stool Pedestal, arranged so as to show some valuable improvements which are used in the **STOOLS**. A very important requisite in a stool is to have the seat steady (not shaky). This feature has already been accomplished in stools by the use of a wooden bushing, through which the screw passed, and which held the same steady at the top. The objection to the wooden bushing was that it would wear out too quickly. We have overcome this objection by casting a shaft in iron, which answers the purpose of nut and bushing, and which is further described as follows:

Fig. 1 represents the iron shaft, of which "B" is the bushing, and above it the nut. It will be observed that the nut is cast in conjunction with shaft or bushing "B," the latter acting as a support for the screw. The screw fitting the bushing snugly prevents the screw, and consequently also the seat, from wabbling; and the shaft, being of iron is, of course, much more durable than the wooden bushing formerly used. In addition to being well dowelled and glued, the wooden feet of our Stools are firmly secured by means of a corrugated steel plate. The plate, to which the seat comes fastened, has a tapered hole into which the shank of the screw is firmly fitted, making it tight and firm at all times. All that is necessary, therefore, is to press the seat on the beveled end of the screw to make the stool ready for use.



No. 4121. Round polished seat, 14½ in. price each..... $2 75

No. 4122. Round polished seat, price each..... $2 50

No. 4123. Round polished seat, 13½ in. price each..... $1 25

We have above stools in either oak, walnut or cherry, high finish and polish. No workman can be without our stools after once trying them. Above price includes boxing and ready for shipping.

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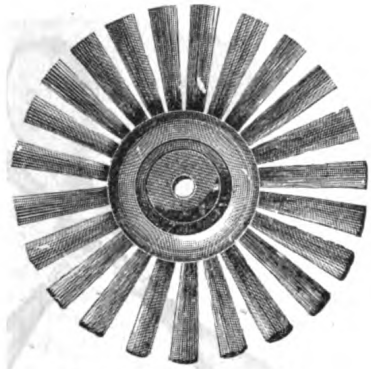
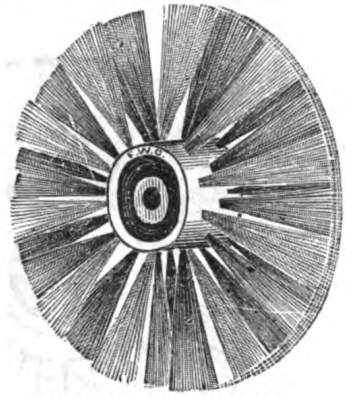
TOOLS B.



BRISTLE BRUSH.

Order by Number for Size and Grade Wanted.



BRISTLE BRUSH.

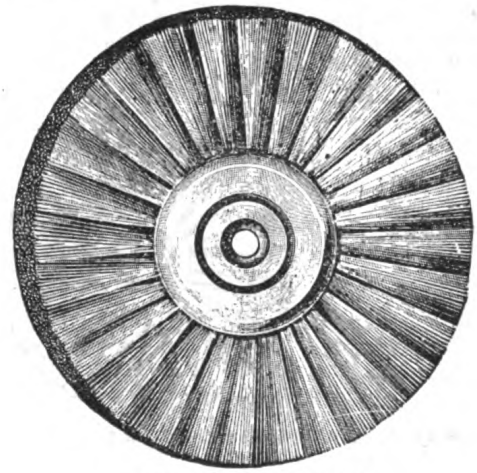
ONE ROW BRISTLE BRUSH.

MEDIUM QUALITY.				FIRST QUALITY.			
No. of Brush.	Diam. Brush.	Each.	Doz.	No. of Brush.	Diam. of Brush.	Each.	Doz.
411	1¾ in.	$0 10	$0 85	416	1¾ in.	$0 10	$1 00
412	2 "	10	1 00	417	2 "	10	1 10
413	2½ "	15	1 25	418	2½ "	15	1 50
414	3 "	20	1 80	419	3 "	20	2 15
415	3½ "	20	2 00	420	3½ "	25	2 50

TWO ROW BRISTLE BRUSH.

MEDIUM QUALITY.				FIRST QUALITY.			
No. of Brush.	Diam. of Brush.	Each.	Doz.	No. of Brush.	Diam. of Brush.	Each.	Doz.
421	1½ in.	$0 15	$1 25	426	1½ in.	$0 15	$1 50
422	2 "	15	1 25	427	2 "	20	1 85
423	2½ "	15	1 40	428	2½ "	25	2 50
424	3 "	20	1 80	429	3 "	30	3 00
425	3½ "	25	2 25	430	3½ "	35	3 50

BRISTLE BRUSH.



BRISTLE BRUSH.

THREE ROW BRISTLE BRUSH.

MEDIUM QUALITY.				FIRST QUALITY.			
No. of Brush.	Diam. of Brush.	Each.	Doz.	No. of Brush.	Diam. of Brush.	Each.	Doz.
431	1½ in.	$0 20	$1 80	436	1½ in.	$0 20	$2 00
432	2 "	20	1 90	437	2 "	20	2 25
433	2½ "	25	2 25	438	2½ "	25	2 50
434	3 "	25	2 50	439	3 "	35	3 50
435	3½ "	30	3 00	440	3½ "	40	4 50

FOUR ROW BRISTLE BRUSH.

MEDIUM QUALITY.				FIRST QUALITY.			
No. of Brush	Diam. of Brush.	Each.	Doz.	No. of Brush.	Diam. of Brush.	Each.	Doz.
441	2 in.	$0 25	$2 25	445	2 in.	$0 25	$2 50
442	2½ "	25	2 50	446	2½ "	30	3 25
443	3 "	25	2 75	447	3 "	35	3 75
444	3½ "	30	3 25	448	3½ "	45	4 50

FIVE ROW BRISTLE BRUSH.

MEDIUM QUALITY.				FIRST QUALITY.			
No. of Brush.	Diam. of Brush.	Each.	Doz.	No. of Brush.	Diam. of Brush.	Each.	Doz.
449	2¾ in.	$0 25	$2 50	450	2¾ in.	40	4 25

SIX ROW BRISTLE BRUSH.

MEDIUM QUALITY.				FIRST QUALITY.			
No. of Brush	Diam. of Brush.	Each.	Doz.	No. of Brush.	Diam. of Brush.	Each.	Doz.
451	2¾ in.	$0 30	$3 00	453	2¾ in.	$0 60	$6 50
452	3 "	$0 35	$3 50				

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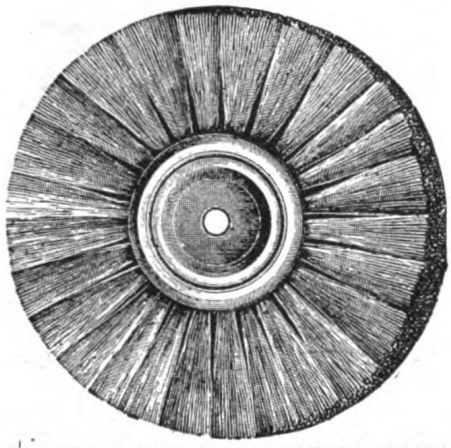
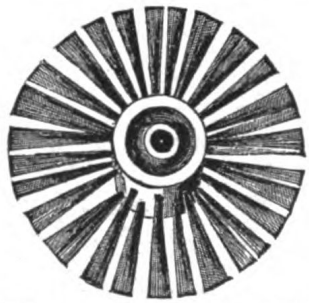
TOOLS B.



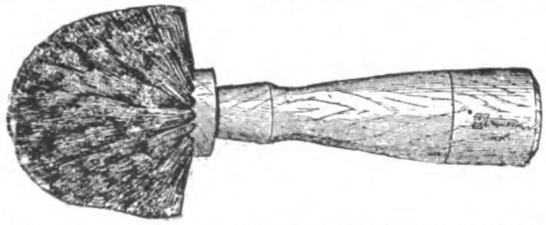
BRASS AND STEEL WIRE SCRATCH WHEEL BRUSH.

ONE ROW.			TWO ROW.			THREE ROW.			FOUR ROW.		
No. of Brush	Diam. of Br.	Each	No. of Brush	Diam. of Br.	Each	No of Brush	Diam. of Br.	Each	No. of Brush	Diam. of Br.	Each
454 ..	2 in.	$0 25	462 ..	2 in.	$0 30	470 ..	2 in.	$0 40	478 ..	2 in.	$0 55
455 ..	2½ "	25	463 .	2½ "	35	471 ..	2½ "	45	479 ..	2½ "	65
456 ..	2¾ "	30	464 .	2¾ "	40	472 ..	2¾ "	50	480 ..	2¾ "	75
457 ..	3 "	35	465 ..	3¼ "	50	473 ..	3 "	65	481 ..	3 "	90
458 ..	3½ "	45	466 ..	3½ "	65	474 ..	3½ "	1 10	482 ..	3½ "	1 25
459 ..	4 "	50	467 .	4 "	85	475 ..	4 "	1 25	483 ..	4 "	1 75
460 ..	5 "	75	468 ..	5 "	1 20	476 ..	5 "	1 50	484 ..	5 "	1 85
461 ..	6 "	1 00	469 ..	6 "	1 45	477 ..	6 "	1 85	485 ..	6 "	2 35



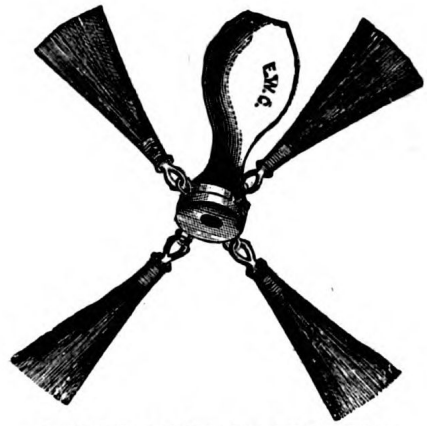
BRASS MATTING OR SATIN FINISH BRUSHES.

ONE ROW.			TWO ROW.			THREE ROW.			FOUR ROW.		
No. of Brush.	Diam. of Br.	Each	No. of Brush.	Diam. of Br.	Each	No. of Brush.	Diam. of Br.	Each	No. of Brush.	Diam. of Br.	Each.
486 ..	2 in.	$0 25	491 ..	2 in.	$0 35	496 ..	2 in.	$0 50	501 ..	2 in.	$0 60
487 ..	2½ "	30	492 ..	2½ "	40	497 ..	2½ "	65	502 ..	2½ "	85
488 ..	3 "	40	493 ..	3 "	55	498 ..	3 "	85	503 ..	3 "	1 40
489 ..	3½ "	45	494 ..	3½ "	65	499 ..	3½ "	1 15	504 ..	3½ "	1 50
490 ..	4 "	60	495 .	4 "	1 00	500 ..	4 "	1 35	505 .	4 "	1 85



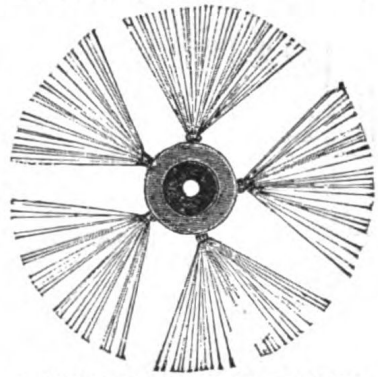
PLATERS' LATHE GOBLET SCRATCH BRUSH.

Rows	6	8	10
No. 504*G*. Wire, Diam., 2, 2½, 3 in ..each,	$0 85	$1 00	$1 25
Rows	6	8	01
No. 505*H*. Bristle.....each,	$0 60	$0 75	$1 10



SWING SCRATCH BRUSH.

No. 498*A*. Brass..... each, $0 70
No. 499*B*. Steel..... " 70

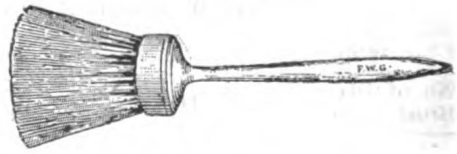


SWING SCRATCH BRUSH.

No. 500*C*. Brass..... each, $0 70
No. 501*D*. Steel..... " 70

SWING SCRATCH BRUSH.

No. 502*E*. Brass.....each, $1 00
No. 503*F*. Steel..... " 1 00



BENCH DUSTERS.

No. 506. Bristle, extra quality, each, $0 50

In ordering Scratch Brushes state if Brass or Steel is wanted, and give Number and Letter of Brush.

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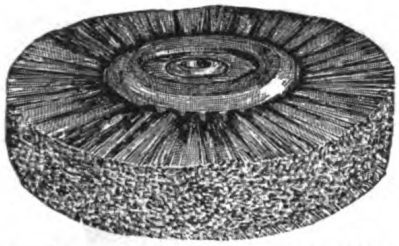
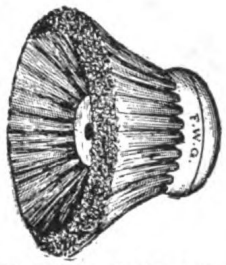
TOOLS B.



MANEHAIR WHEEL BRUSHES FOR FINISHING.

No. of Brush.	No. of Row.	Block.	Diam. of Brush.	Each.	Dozen.
507	2	1¼ in.	2½ in.	$0 20	$1 75
508	3	1¼ in.	2½ in.	25	2 50
509	4	1¼ in.	2½ in.	30	3 00
510	5	1¼ in.	2½ in.	35	4 00
511	5	1¼ in.	3 in.	40	4 50
512	6	1¼ in.	2½ in.	45	5 00
513	6	1¼ in.	3 in.	50	6 00

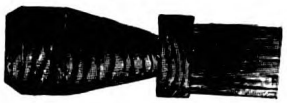


SILVERSMITH'S CUP SHAPE BRUSH.

No. 514. Bristle.....each, $0 50
" 515. Brass scratch " 75

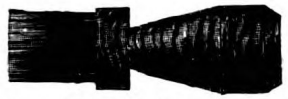
SILVERSMITH'S LATHE INSIDE BRISTLE BRUSH.

No. 516. .....$0 25 and $0 30



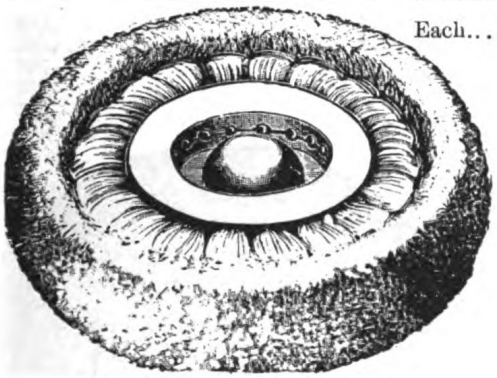
NO. 517. BRASS SCRATCH END BRUSH.

Each..... .....$0 25



NO. 519. BRISTLE END BRUSH.

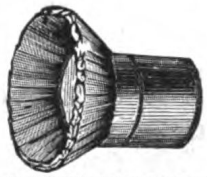
Assorted lengths.....each, $0 10



COTTON WHEEL BUFFS.

DIAMETER OF BLOCK IN INCHES.

¾ to 1¼ Inch.				2 Inch.			
No. of Brush.	No. of Row.	Each.	Dozen.	No. of Brush.	No. of Row.	Each.	Dozen.
521	2	$0 10	$1 00	526	2	$0 20	$2 00
522	3	15	1 65	527	3	25	2 75
523	4	20	2 25	528	4	35	3 75
524	5	25	2 75	529	5	45	5 00
525	6	35	3 50	530	6	50	5 50



CASE BRUSHES. NO. 546.

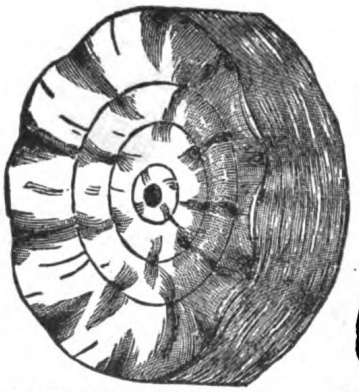
Each.....$0.15
Doz.....$1.50

COTTON CASE BUFFS.

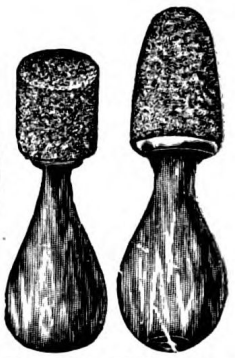
No. 520. Each $0.15
Doz. 1.50

FELT CASE BUFFS.

No. 518. Each $0.10
" 518½. " .15



COTTON FLANNEL LATHE BUFF.



NO. 539. NO. 538. FELT BUFFS.

No. 533.	3 in. Diam.....	Each,	$0.20	Dozen,	$2.25
" 534.	4 in. "	"	.25	"	2.75
" 535.	5 in. "	"	.35	"	3.75
" 536.	6 in. "	"	.45	"	5.00
" 537.	8 in. "	"	.75	"	8.00
" 538.	Thimble.....	"	.15	"	1.50
" 539.	Locket.....	"	.15	"	1.50

FELT RING LATHE BUFFS.

For inside of Rings.

No. 531. Solid 3 in.....each $0.20 Dozen.....$2.25
" 532. Solid 4 in..... " .30 " 3.50
Small size for children's rings.....each, 20

COTTON RING BUFFS.

No. 540.	2-inch	Each,	$0 15	Dozen,	$1 75
" 541.	3-inch.....	"	20	"	2 25
" 542.	4-inch.....	"	25	"	2 50
" 543.	5-inch.....	"	30	"	3 00
" 544.	6-inch.....	"	35	"	3 75

JOINT BUFF.

No. 545.	Felt.....	each,	$0 15	Dozen,	$1 75
" 545½.	Walrus.....	"	15	"	1 75

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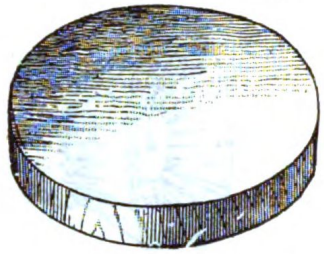
TOOLS B.

SOLID FELT LATHE BUFFS.

No.	Diameter of Wheel	Diameter of Face. ¼ in.	⅜ in.	½ in.	⅝ in.	¾ in.	⅞ in.	1 in.
547	1½ inch. each,	$0 10	$0 10	$0 10	$0 15	$0 15	$0 20	$0 20
548	1¾ " "	10	15	15	20	25	25	30
549	2 " "	15	15	20	25	30	35	40
550	2½ " "	15	20	25	30	35	40	45
551	3 " "	25	30	40	45	50	55	60
552	4 " "	45	60	70	80	1 00	1 10	1 15



BOXWOOD POLISHING LAPS.

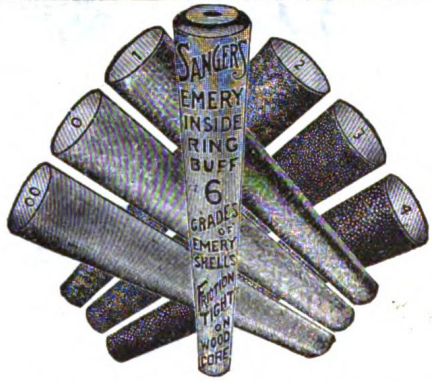
No. 563. 4 in. diameter, each $0.50
No. 564. 5 " " " 75
No. 565. 6 " " " 1.00
Boxwood slips, each $0.10.

FELT POLISHING WHEELS

With Hard Wood Centre and Continuous Ring of Felt.

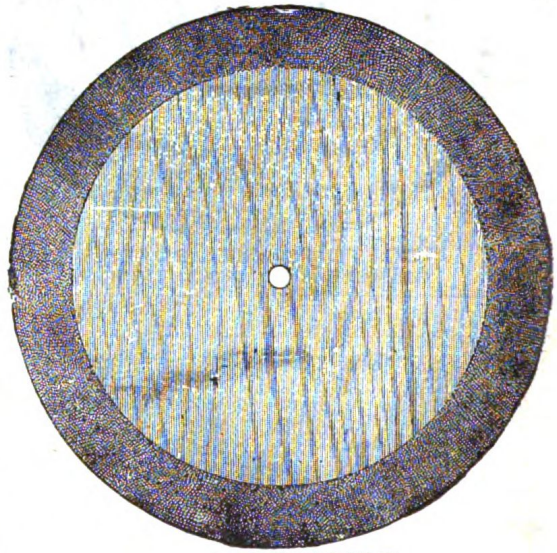
No. 553.	2 in. Diameter,	½ in. Face.	Each.	$0.15
" 554.	2 " "	⅞ "	"	25
" 555.	2½ " "	⅝ "	"	20
" 556.	2½ " "	¾ "	"	25
" 557.	2½ " "	⅞ "	"	30
" 558.	2½ " "	1 "	"	35
" 559.	3 " "	½ "	"	30
" 560.	3 " "	⅝ "	"	35
" 561.	3 " "	⅞ "	"	40
" 562.	3 " "	1 "	"	50

No. 574
FLY RING GRINDER.
Price, each, $0 25; set of 3, $0 50
For grinding out superfluous solder, etc.



NO. 4124. SANGER'S EMERY INSIDE RING BUFFS.

Six grades of emery sheets and one wood cone, a labor and time-saving contrivance.
Price, per set..... .....$0 25
Additional shells, per doz..... 0 15



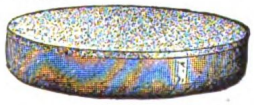
WALRUS WHEELS.

Wood Centre, Continuous Ring of Walrus Leather (no joint).

No. of Wheel.	Diameter of Wheel.	Thickness of Wheels in In. ⅝	¾	⅞	1
575	2½ in. each.	$0 15	$0 20	$0 25	$0 30
576	3 " "	35	40	45	55
577	4 " "	40	50	60	70
578	4½ " "	50	60	70	80
579	4¾ " "	60	75	85	1 00
580	5 " "	90	1 15	1 25	1 40
581	6 " "	1 10	1 50	1 75	2 00

SOLID WALRUS WHEELS.

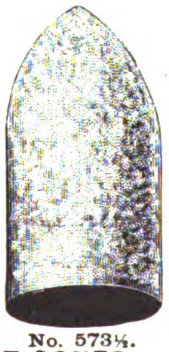
No. of Wheel.	Diam. of Wheel.	Thickness of Wheels in Inches. ⅝	¾	⅞	1	1¼
582	1½ in. each	$0 15	$0 15	$0 20	$0 20	$0 25
583	2 " "	20	25	35	40	50
584	2½ " "	30	45	50	60	75
585	3 " "	50	70	80	1 00	1 25
586	4 " "	75	1 00	1 10	1 25	1 50



Laps or Side Polishing Buffs.
Covered with felt.

No. 566.	3 in....	each,	$0 35
" 567.	4 in....	"	50
" 568.	5 in....	"	85
" 569.	6 in....	"	1 10
" 570.	7 in....	"	1 50
" 571.	8 in....	"	2 00

No. 572.



No. 573½.

DENTISTS' FELT CONES.

Each, $0 15 No. 573. Ea., pointed tops, $0 20
" 573½ " round " 25

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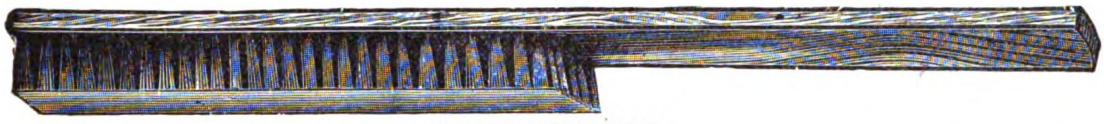
TOOLS B.

HUMAN HAIR BRUSHES.—For Dials and fine Plates.

No. 587.	3 Row Human Hair Brushes	Each, $0 30	Doz. $3 25
No. 588.	4 " " " " Best quality	" 40	" 4 50



HAND BRUSHES.

No. 589.	Brushes, Watch, Hinnen, wood handle, 3 row	Each, $0 12,	Dozen,	$1 35
" 590	" " " " " 4 "	" 15,	"	1 60
" 591	" " " " " 5 "	" 20,	"	1 85
" 592	" " Guarantie, " " 3 "	" 15,	"	1 60
" 593	" " " " " 4 "	" 20,	"	2 25
" 594	" " " " " 5 "	" 25,	"	2 75
" 595	" bone handle, 1 row, each, 15c. per dozen, $1 50; 2 row	" 15,	"	1 75
" 596	" " " 3 row	" 15,	"	1 75
" 597	" " " 4 row, each, 20c.; extra quality	" 30,	"	3 00
" 598	" " " 5 "	" 25,	"	2 50
" 599	" " " 6 "	" 30,	"	3 25

The above brushes come in hard, half hard, soft and half soft. State kind wanted in ordering.

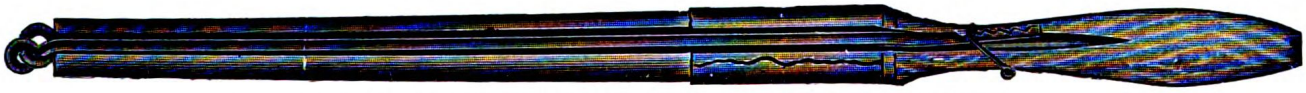
THE BOSS BRISTLE BRUSH.

Fine veneered. Each brush has our name stamped on handle, showing it to be our own exclusive make. Soft, **half soft, hard** and half hard.

No. 4125. 2 Row.....each, 25c. Per doz., $2 75. **No. 4126.** 3 Row.....each, 30c. Per doz., $3 00

No. 4126½. 4 Row.....each, 35c. Per doz., $3 50

NO. 602 FLAT ADJUSTABLE BUFF STICK.



NO. 603. HALF ROUND ADJUSTABLE BUFF STICK.

Felt covered, made in three styles, No. 602 flat; No. 603, half round; No. 604, round; with spring steel wire to hold emery paper fast when wound around buff.

Price.....Each, $0 20

ROUND LEATHER BUFF.

No. 605.	Round Leather Buffs	Each, $0 10,	Doz. $0 75
" 606.	" " " Rouged, assorted	" 10,	" 1 00

HALF ROUND LEATHER BUFFS.

No. 607.	Assorted Thickness	Each, $0 10,	doz. $0 50
" 608.	" " Rouged	" 10,	" 75

These Buffs are the best quality made.

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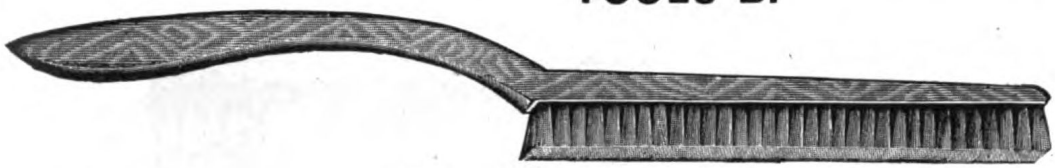
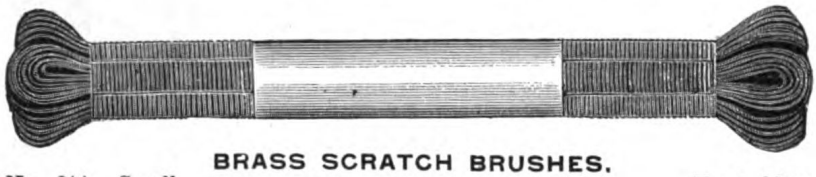
TOOLS B.



SCRATCH BRUSHES.

No. 610.	1 Row Brass, with handle	Each, $0 25
No. 611.	2 " " " "	" 30
No. 612.	3 " " " "	" 40
No. 613.	4 " " " "	" 50



BRASS SCRATCH BRUSHES.

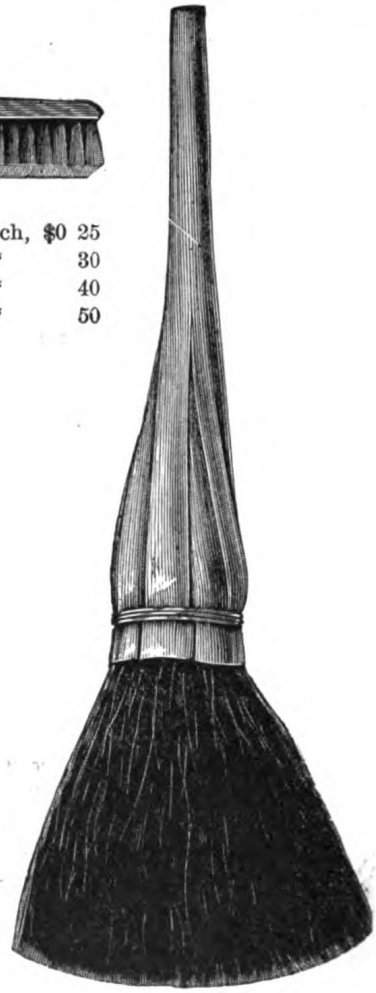
No. 614.	Small	Each, $0 20
No. 615.	Medium	" 25
No. 616.	Large	" 30

NO. 617. GLASS SCRATCH BRUSH.

Glass, Scratch.....Each, $0 25

NO. 618. BORAX BRUSHES.

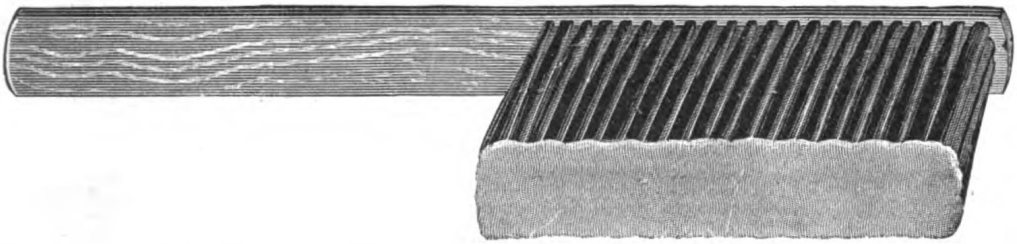
Dozen.....$0 20 Gross.....$1 50



NO. 609. CAMEL'S HAIR BRUSHES.

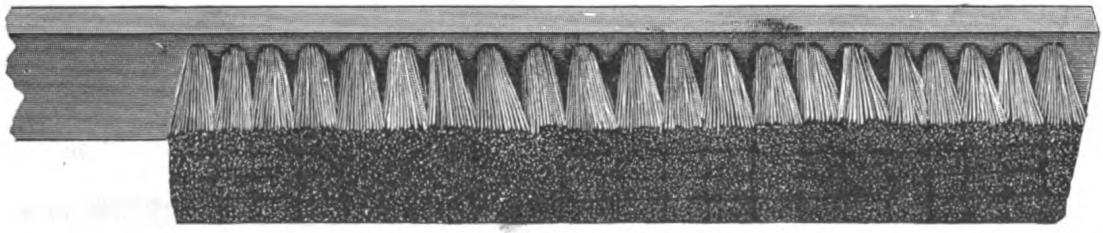
For dusting dials and new movements.

Each.....$0 25



BENCH BRUSHES.

No. 619.	1 Row	Each, $0 15	Doz.	$1 50
No. 620.	2 "	" 20	"	2 25
No. 621.	4 "	" 25	"	2 75



BRUSHES FOR PLATERS AND CLOCK WORK.

No. 622.	Clock Brushes, wood handle, 4 row	Each, $0 20	Doz.	$2 25
No. 623.	" " " " 5 "	" 20	"	2 50
No. 624.	" " " " 6 "	" 25	"	2 75

The above are first quality of brushes.

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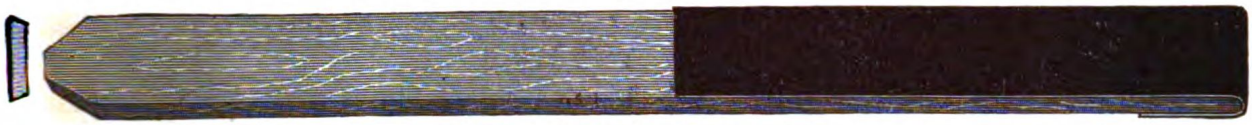
TOOLS B.

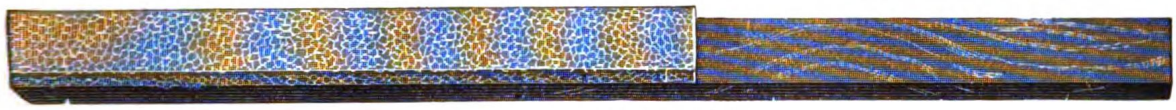
NO. 669. FLAT LEATHER HAND BUFF.

Flat Leather Buff, ... each, $0 05 per doz., $0 35



FLAT LEATHER HAND BUFF.

No. 670. Flat Leather Buff, turned edge, extra quality ..... each, $0 10 per doz., $0 75
No. 771. " " " " " rouged ..... " 5 " 50



FLAT FELT HAND BUFF.

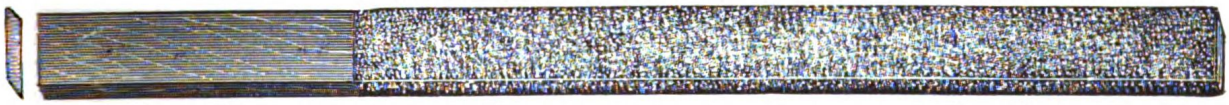
No. 672. Flat Felt ..... each, $0 10 per doz., $0 85
No. 673. " " extra quality ..... " 15 " 1 25

NO. 674. ROUND FELT BUFF.

Round Felt Hand Buff ..... each, $0 20 per doz., $2 00

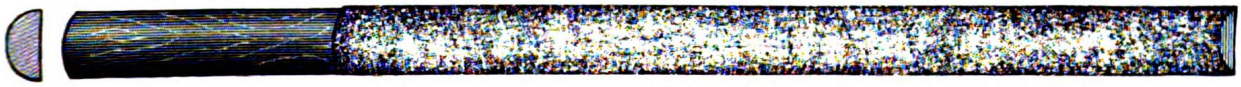
NO. 675. FLAT EMERY BUFF.

Flat Emery Buff ..... each, $0 05 per doz. $0 20



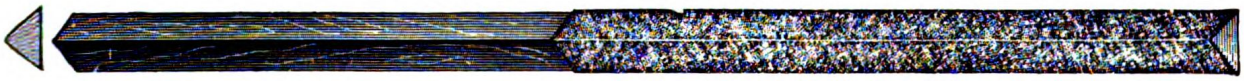
NO. 676. FLAT EMERY BUFF.

Best Quality ..... each, $0 05 per doz., $0 35



NO. 677. HALF ROUND EMERY BUFF.

Assorted sizes ..... each, $0 05 per doz., $0 25



NO. 678. THREE SQUARE EMERY BUFF.

Assorted sizes ..... each, $0 05 per doz., $0 30

NO. 679. ROUND EMERY BUFF.

Assorted sizes ..... each, $0 05 per doz., $0 25

Emery Buffs come from 4-0 Finest to No. 3 Coarsest. State grade wanted.

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No.....
.....189
M.....
....Move't No .....
.....Case No.....
Work done.....
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.....
.....
$.....

No..... 189

This Certifies, *that work mentioned herein was done this day on*

M.....*watch,* { ..... Movem't, No..... / ..... Case, No.....

and.....*hereby guarantee said work to remain in good order for*.....

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If, with careful usage, these parts get out of order within the time mentioned,.....promise to repair said parts again, upon presentation of this Certificate, free of charge. But no parts not here mentioned are warranted, nor will any claims be allowed except on presentation of this Certificate.

Work done on Move't.....

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Job Number.	Description of Case and Number.	Description of Movement and Number.	Date Received.	Owner's Name.	Left by	Delivered to	Date Delivered.	Repairs.	Price.	Sent to or Rep'd by
1	*Silver, openface, 106400*	*Wm. Ellery, 708961.*	*June 10th*	*Edward Kubic.*	*E. K.*	*E. K.*	*June 14th*	*Cleaning.*	*$1 50*	*William.*
2	*Gold, S. W., 708642.*	*Park Road, 980610.*	*June 11th.*	*Thomas Johnson.*	*Mrs. J. S.*	*T. J.*		*Mainspring, lower 3d jewel, upper cap jewel.*	*$4 00*	*A. W. Co.*

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Price.....$1 50

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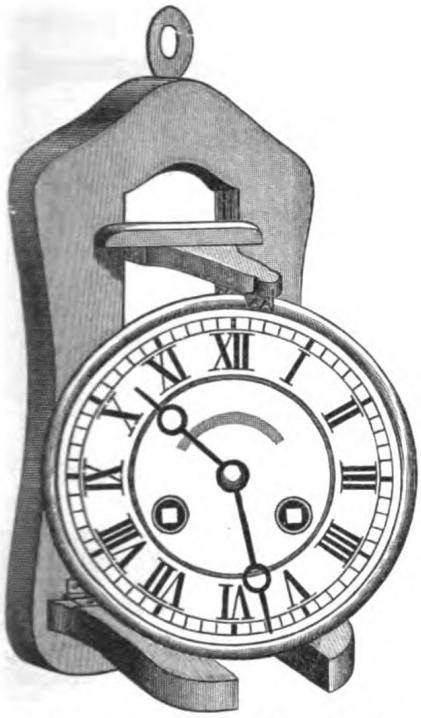

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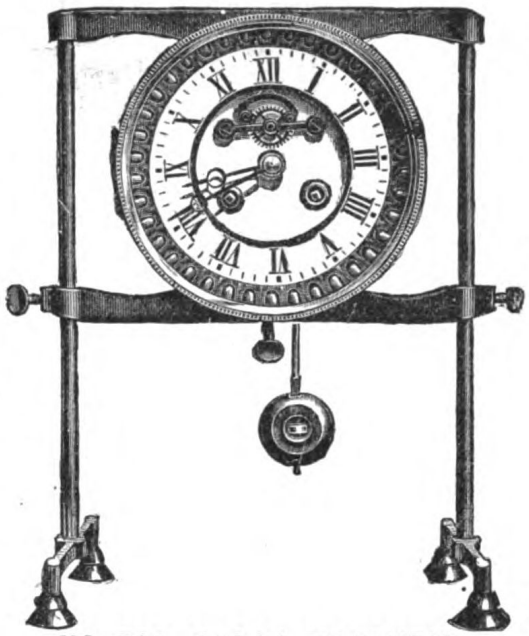

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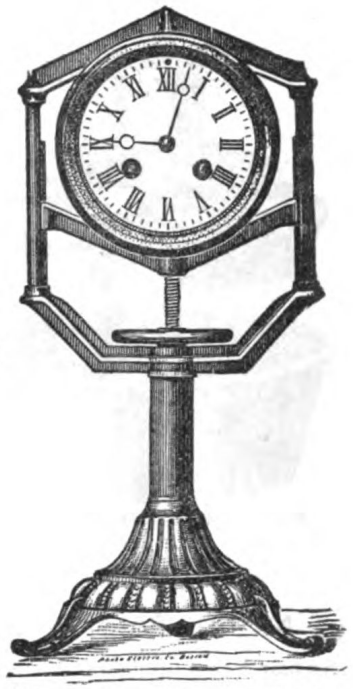

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Made of iron, 14½ inches high, 6½ inches across; easily adjusted.

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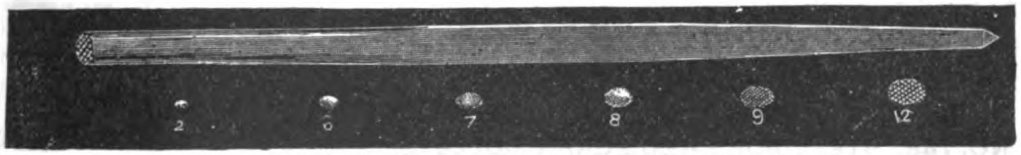

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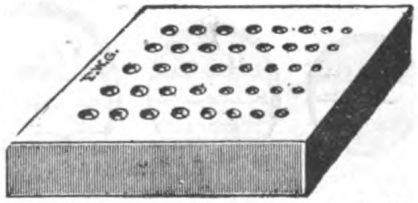

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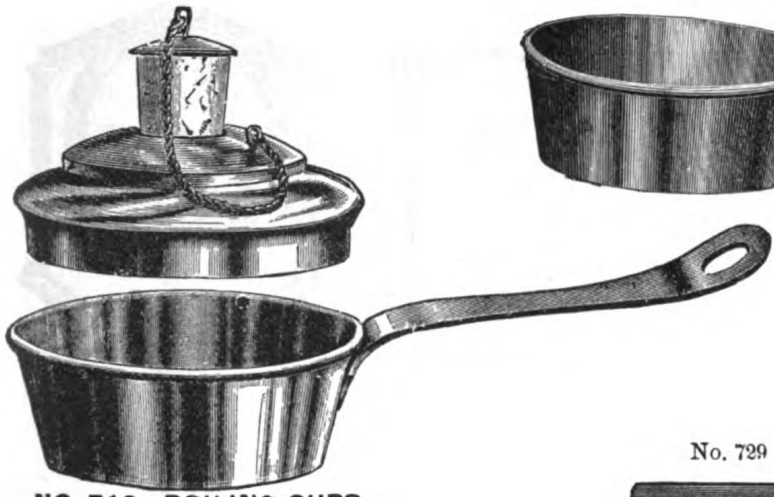

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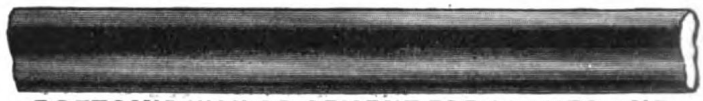

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"D" IS TWICE AS THICK AS "C."
Warranted accurate and clean and to fit all sizes of watch balances.
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For holding Cylinder Scape Wheels while fitting or making alterations.

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3 and 4 Screw.

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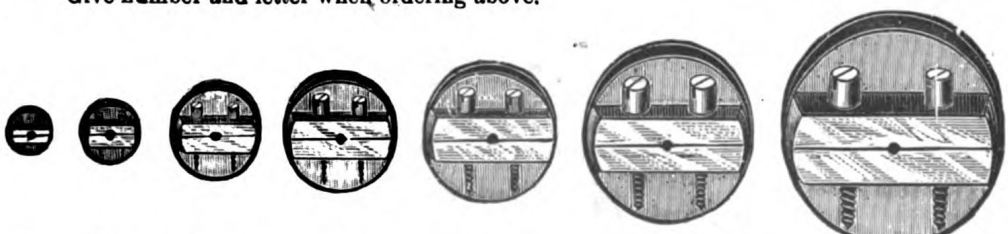

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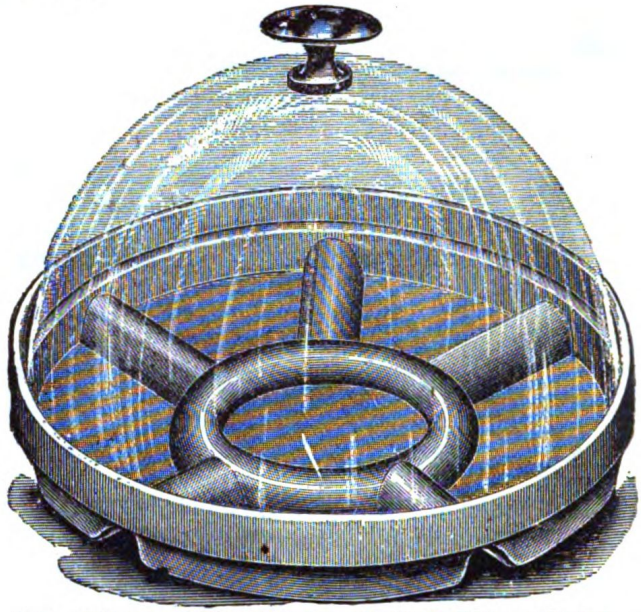
" 684.	4½ "	"	35
" 685.	4¾ "	"	35
" 686.	5 "	"	40
" 687.	5½ "	"	45
" 688.	6 "	"	45



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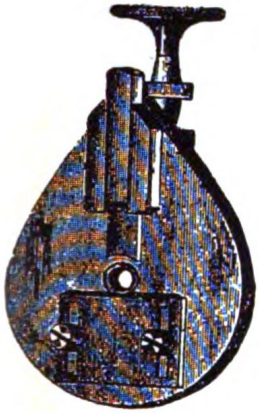

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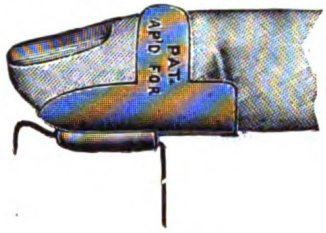

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Place tool on forefinger of left hand, hold movement between thumb and other forefinger of same hand. Hold key or square in right hand to control the run of mainspring.

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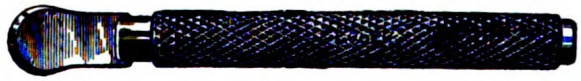

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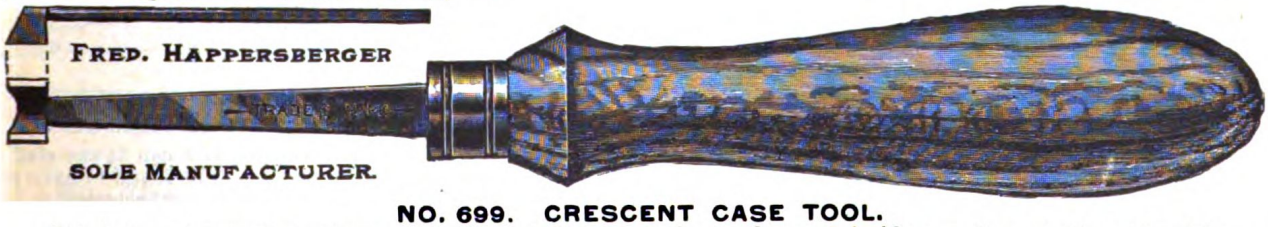

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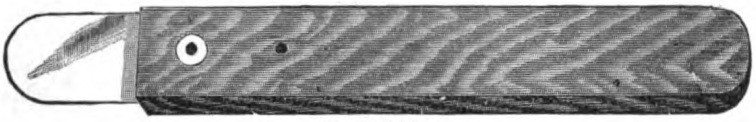

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Steel and Nickel-plated. Price.....each, $0 35

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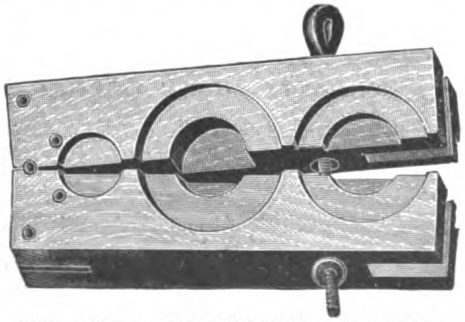
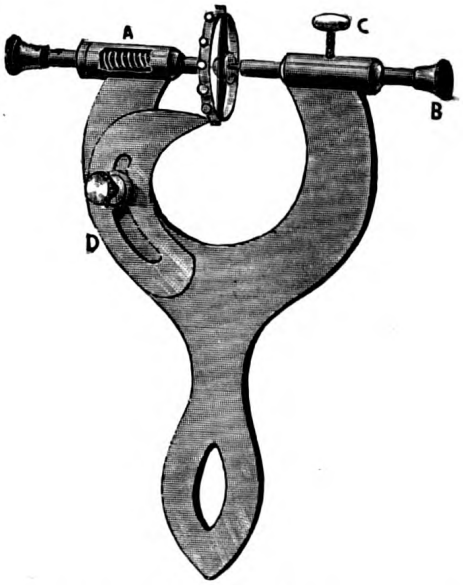


NO. 4172. ENGRAVING CLAMP.

For Buttons, Rings, Charms, Coins, Bangles, etc. Will grip instantly and securely without marring the finest article.

Price.....$1 50



NO. 4176.

BEACH & CO. STAFF MEASURE AND WHEEL-TRUING CALIPERS.

By using this tool as directed, you can fit any staff or cylinder the exact length, and it will be found to have just the right amount of end shake; as a wheel-truer it is a perfect tool. To remove and replace wheel in gauge, pull back on center A. Price, Nickel-plated.....$1 00

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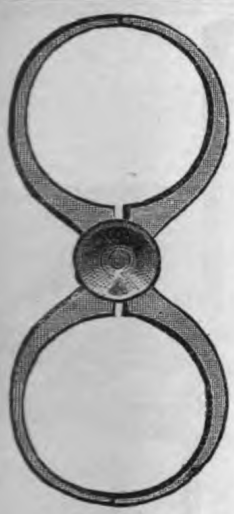
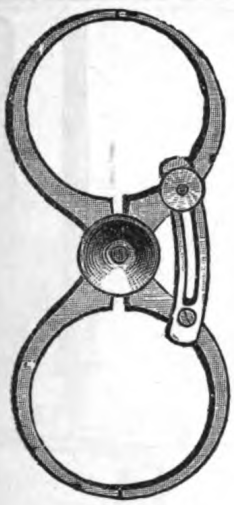
TOOLS C.



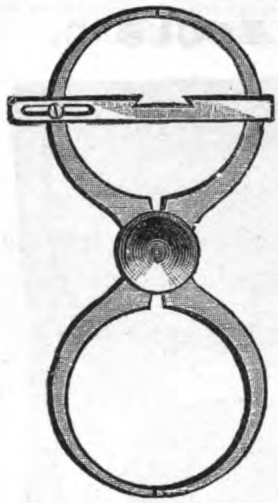
No. 741.

Caliper.....$0 15
Nickel Plated.. 25
Aluminum..... 25



No. 742.

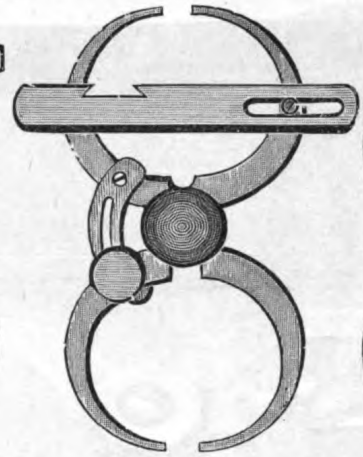
Caliper.....$0 20
Nickel Plated . 30



No. 743.
Cuts three-quarter size.

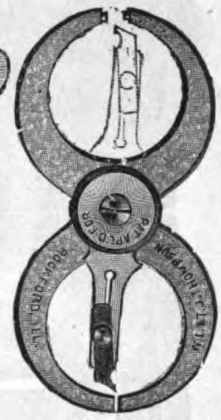
CALIPERS.

Caliper $0 15
Nickel Plated 30



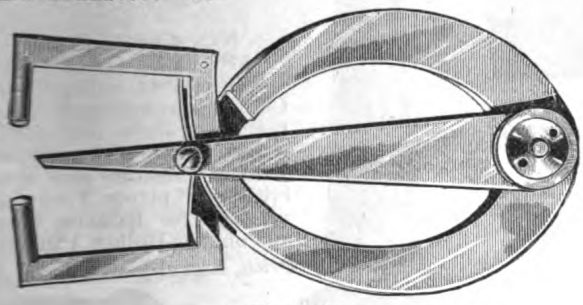
No. 744

Caliper..... $ 25
Nickel Plated 40



No. 745.
JEWELED.

Caliper.....$1 00
in Morocco case, 1 25



No. 746.

NEW IMPROVED CALIPER.

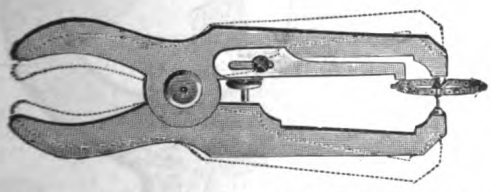
Brass.....Each, $0 40 Nickel Plated.....Each, $0 60

No. 747

IRMEN'S PATENT CALIPER

Combines in one tool, caliper, balance-plier, and poising tool.

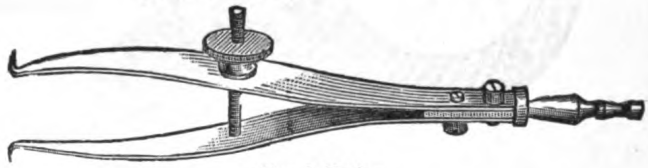
Nickel Plated, - - $1.40



NO. 748. BROCKWAY'S SPRING CALIPERS.

These calipers are furnished with an adjustment screw. The watch wheel may be removed and replaced at will without fear of bending or breaking the pivots.

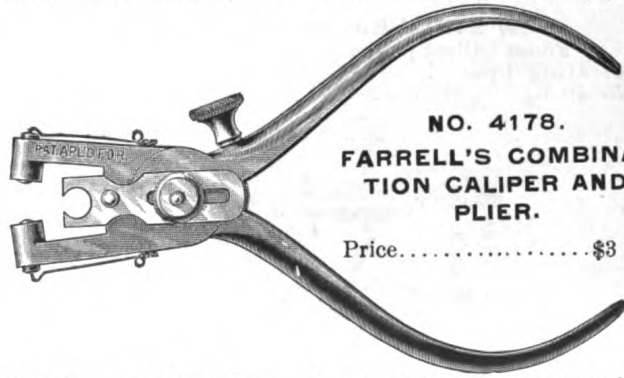
Price, Nickel Plated.....Each, $1 50



Cut full size.

NO. 749. CALIPERS FOR INSIDE MEASUREMENT.

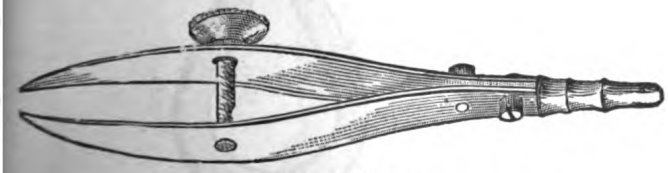
Price..... Each, $0 20 Nickel Plated.....Each, $0 30



NO. 4178.

FARRELL'S COMBINATION CALIPER AND PLIER.

Price.....$3 50



Cut is full size.

NO. 750. CALIPERS FOR OUTSIDE MEASUREMENT.

Price .....Each, $0 20 Nickel Plated Each, $0 30

The balance wheel can be trued and poised without removing from tool; it is easily adjusted to any length staff and has a spring in the front part to hold it open while the wheel is being turned, the pivots of arbor set in cone pump centers, which play loose in their sockets when the plyers are closed, thus avoiding any strain whatever on the pivots.

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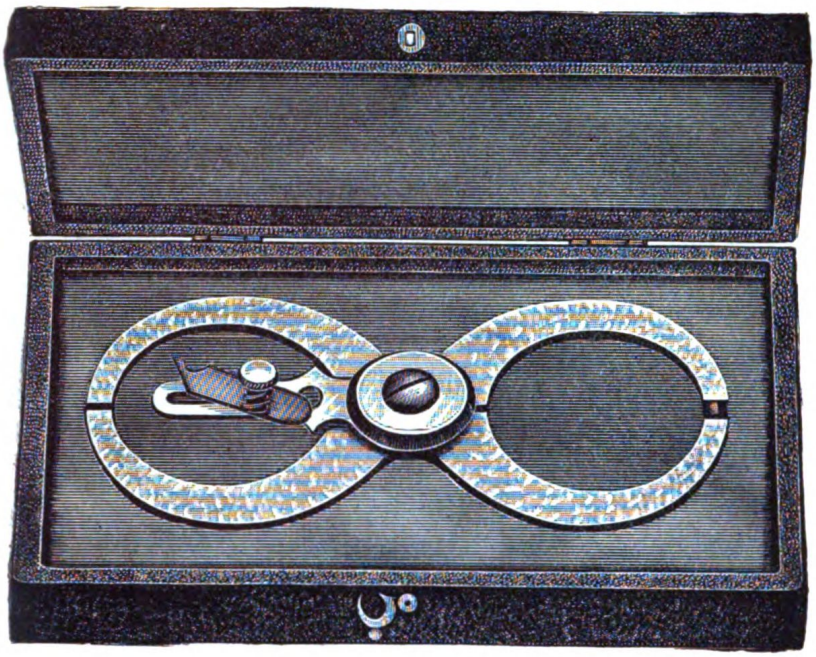
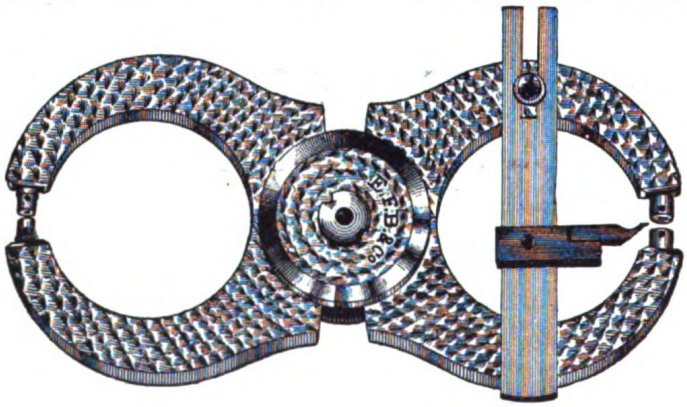
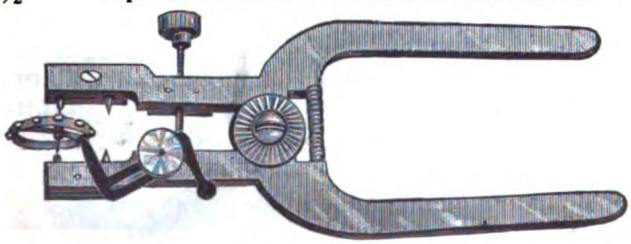
TOOLS C.



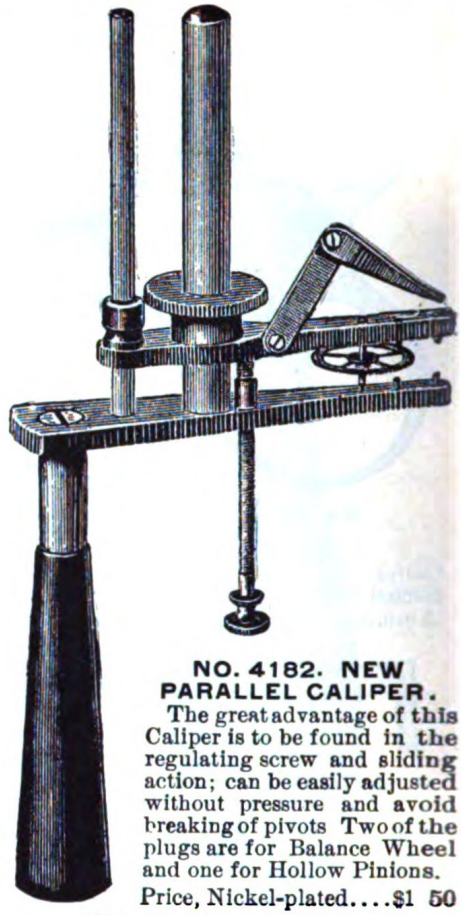
NO. 4179. JEWELED CALIPER.
Best quality. The Jewel is V shape, therefore a perfect tool. Price, $1 25



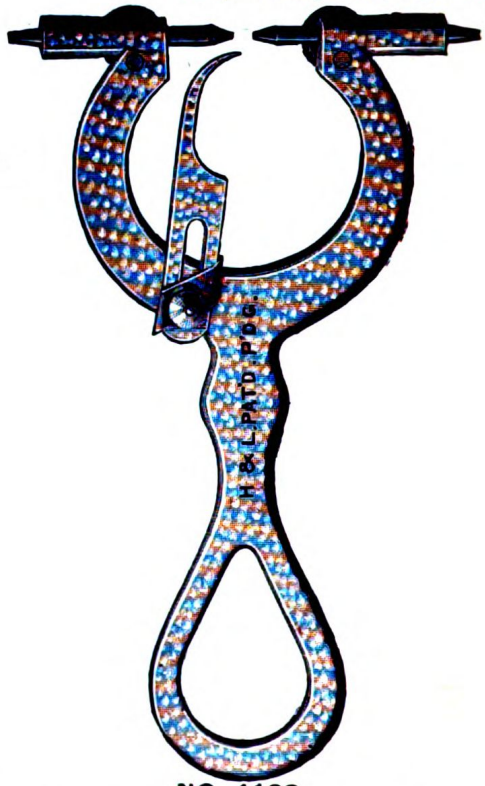
NEW STYLE BALANCE WHEEL TRUING CALIPER.
Finest Caliper put on the market, Nickel and Damasquine finish.
No. 4180. Price ..... Each, $2 50
No. 4180½. " Imported ..... " 2 00



NO. 4181. THE EXCELSIOR CALIPER.
When once set right, stays there, by which much of your time is saved, besides you run no risk of breaking pivots in case of too much pressure when closing the jaws. The set screw will not allow it. The taper points are intended for testing Center Wheels with hollow pinions. Price, each, $1.00



NO. 4182. NEW PARALLEL CALIPER.
The great advantage of this Caliper is to be found in the regulating screw and sliding action; can be easily adjusted without pressure and avoid breaking of pivots Two of the plugs are for Balance Wheel and one for Hollow Pinions.
Price, Nickel-plated....$1 50



NO. 4183.
NICKEL UNIVERSAL CALIPER.
Price.. ..... $2 75

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TOOLS C.

NO. 754.

NO. 758. STEEL HAND CROWN CUTTER.
(Cut full size.)

For cutting out inside of crowns for watch cases. It has three split chucks of different sizes, which can be enlarged so as to cut all sizes of openings needed.

Price, in morocco box.....$2 00

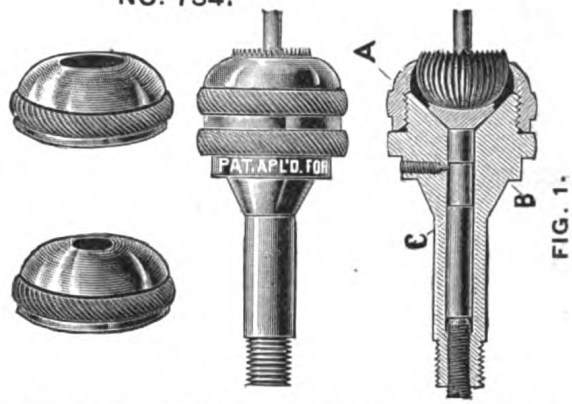
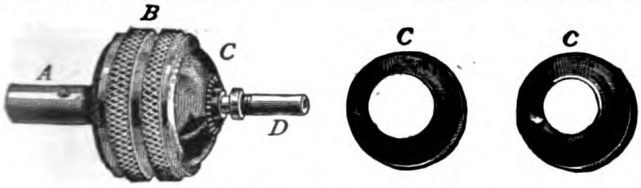


FIG. 1.

JOHANSON'S CROWN CHUCKS AND TURNING TOOLS.

Fig. 1, shows the construction of this chuck which will hold all sizes of crowns firmly and truly under any ordinary pressure. It is a solid steel chuck made to fit the lathe head and having in its center a stud capped with felt and adjustable by means of a left hand thread. This is set at the proper distance to support the size crown desired, and a suitable cap having a right hand thread, holds the crown firmly in place. Four sizes of caps are provided with each chuck, thus holding all sizes of crowns. In ordering always state make of lathe ii is to fit.

No. 752. Brass. Price, complete as shown above, including set (3) Turning Tools.....$4 00
No. 753. Steel. Price, complete as above..... 5 00
No. 754. Price, Turning Tool, separately.....each, 50
No. 755. Price, " " set of 3..... 1 25



Mills Pat. Jan. 19th, 1892.

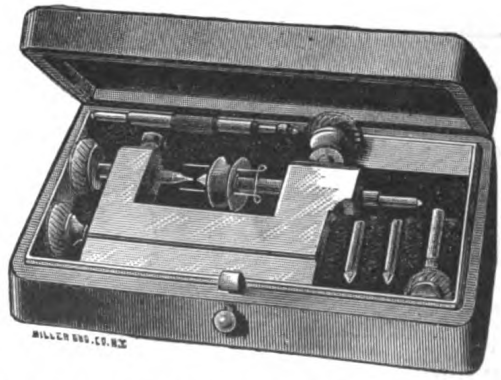
MILLS' PATENT WATCH-CROWN HOLDER AND GRAVER.

The simplest and easiest crown-chuck made. Will fit any American lathe with a No. 50 wire-chuck.

No. 4185. Price for Crown-Holder..... $3 00 No. 4184. With Graver..... $3 50

EXCELSIOR CROWN TOOL.

No 4187. Set of 3 as shown above.....$1 25



NO. 4186. DAUSCH'S CENTERING LATHE.
Superior in quality to any in the market.

Price, without Collet.....each, $2 75
" with Collet..... " 3 00

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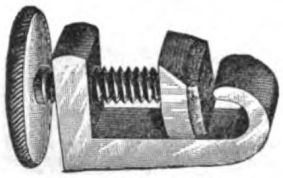
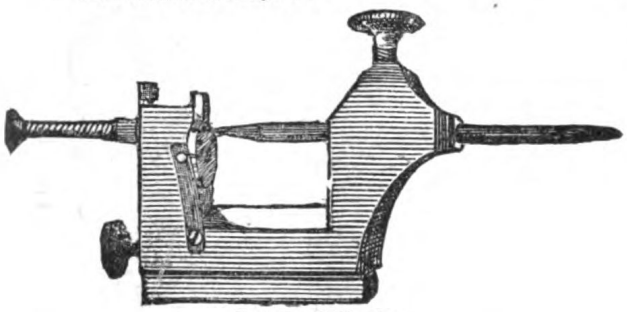
TOOLS C.



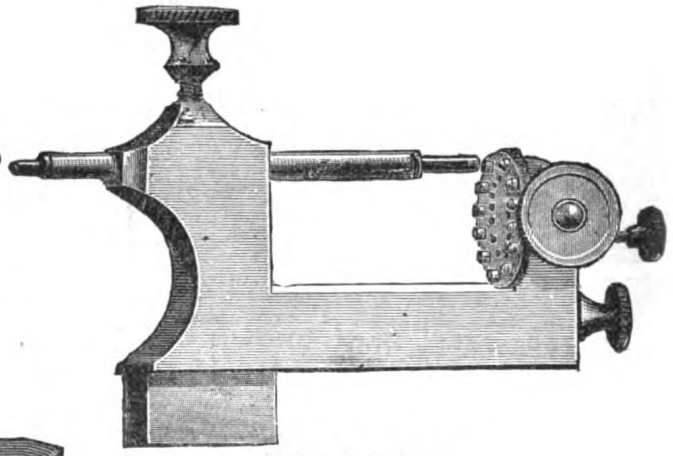
NO. 760. BOSS CASE SPRING TOOL.
Price.....$0 50

Cut is full size.
HAND CENTERING TOOL.
No. 761.....$0 35

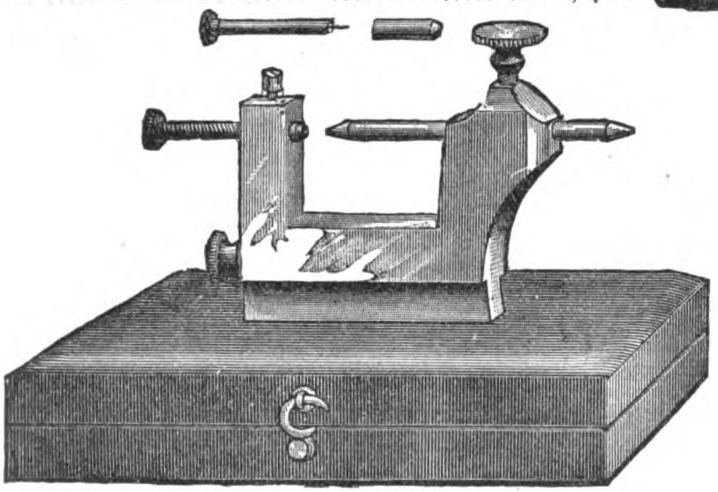
Cut is full size.
DOUBLE HAND CENTERING TOOL.
No. 763. Single.....$0 25
No. 763½. Double..... 35



Cut is full size.
NO. 762. CENTERING LATHE.
n Morocco Case..... .Each, $0 80



Cut is full size.
CENTERING LATHE.
No. 765. Centering and Drilling Lathes.....$2 25
No. 765½ " " " Extra quality.... 2 75

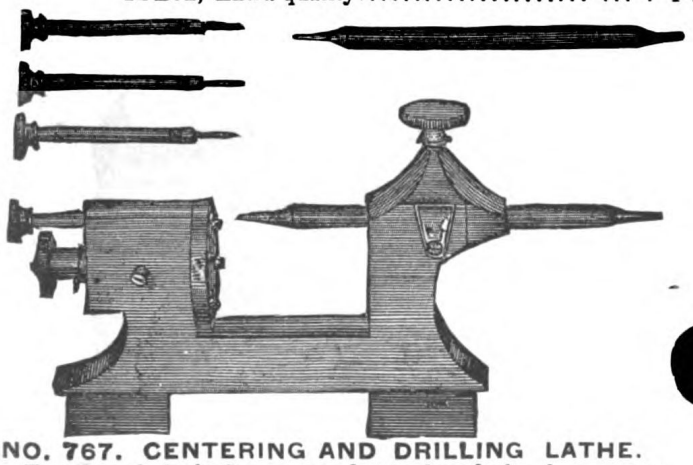


Cut is full size.
CENTERING LATHE.
No. 764. In Box.....$1 00
In Box, Extra quality..... 1 25

NO. 766. CIRC. GLASS CUTTING DEVICE.

A simple device for cutting round glasses for clocks, etc. The long rod is divided into 1-16 graduations. The base of rest is supplied with a rubber disc, to avoid scratching and to produce a good hold on the glass.

Cutting device, without the cutters.....$1 50
" " with the cutters.....1 85



NO. 767. CENTERING AND DRILLING LATHE.

The above lathe is the most perfect tool made for the purpose, has a revolving plate with 12 holes and groves, 2 broaches and assortment of drills. The whole comes in a fine morocco box. Cut is ¾ size. Price.....$4 50

NO. 768. DRILL BOW CATGUT.
Catgut for Drill Bows..... ..Per dozen, $0 15

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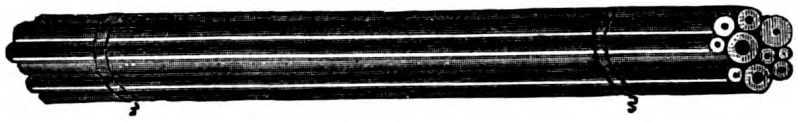
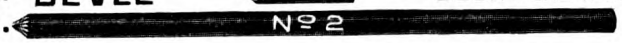
TOOLS C.



Cut is full Size.

NO. 769. CLOCK BUSHING WIRE.

Bushing Wire.....per bunch, $0 30

NO. 770. BEVEL **COUNTERSINKS.**
NO. 771. 

HAPPERSBERGER'S COUNTERSINKS.

In ordering this style say—"Bevel Countersink."

No. 770. Bevel.....$0 50
" 771. " 35

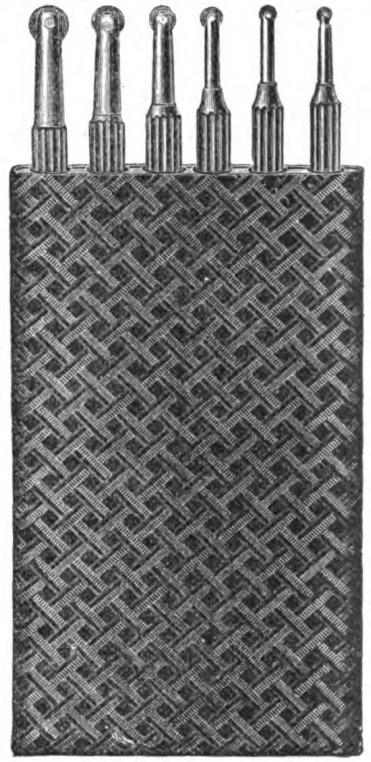
NO. 772. NEW STYLE ADJUSTABLE COUNTERSINK WITH 6 BLADES.

Price, Nickel-plated.....per set, $0 40

Cut ⅞ Size.

NO. 773. DIAMOND CHARGED STEEL COUNTERSINK.

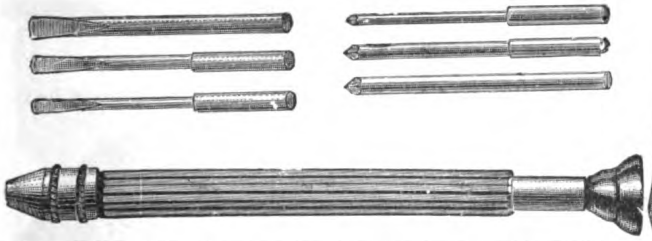
Price.....each, $0 70



NO. 775.
COUNTERSINKS AND BURNISHERS.

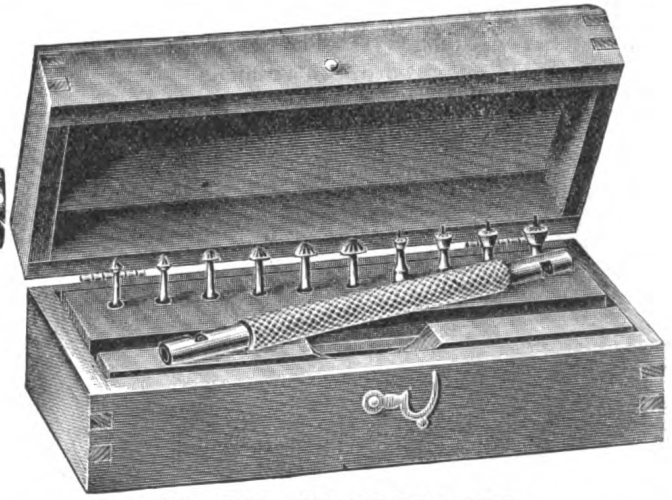
Extra Fine Quality, used in setting Taper Jewels.

No. 775. Set of 3..$0 50 Best Quality..$0 66
" 776. Set of 6. 1 00 " .. 1 10



NO. 774. ADJUSTABLE HANDLE COUNTERSINKS.

Nickel-plated.....set, $0 70



NO. 780. COUNTERSINKS.

Fine Steel Countersinks, in box, with 10 Countersinks, with Handle

Price.....$2 25

Cut is full Size.

NO. 779. EMERY COUNTERSINK.

Emery.....$0 10

NO. 781. COUNTERSINKS.

Pinion Wire.....each, $0 15

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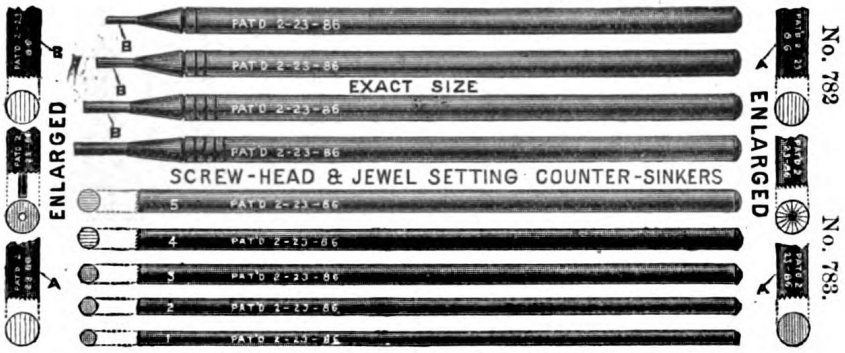
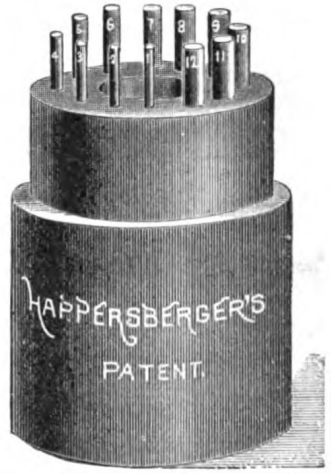
TOOLS C.



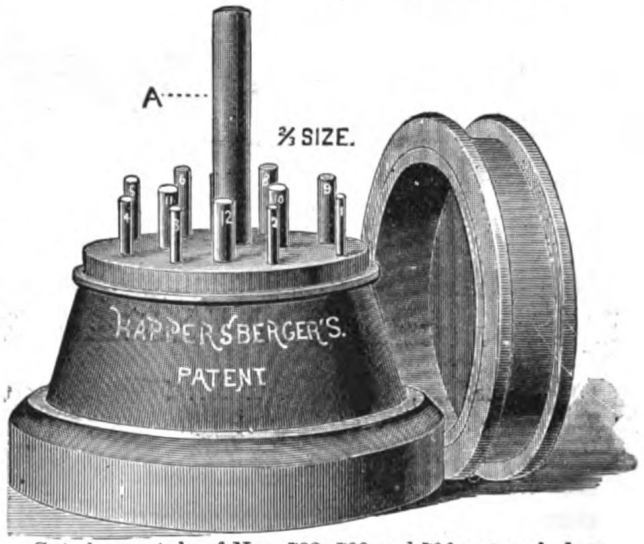
HAPPERSBERGER'S COUNTERSINKS.

No. 782. Flat Countersinks for screw heads.....Set of 5, $1 25
No. 783. " " for Jewel settings..... ..... Set of 6, 1 25
No. 784. " " larger than No. 783.....Set of 7, 1 75

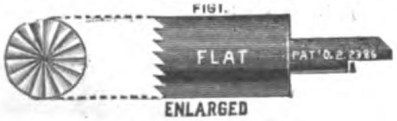


Cut shows style of Nos. 785, 786 and 787, put up in box, with cover.

No. 785. Set of 12 (flat) $3 00
No. 786. Set of 12 (hollow) same style as No. 785..... 4 50
No. 787. Set of 12, provided with a centering pivot, same style as No. 785 ..... 5 00

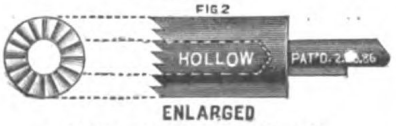


Cut shows style of Nos. 788, 789 and 790 put up in box.



NO. 788. FLAT.

Set of 12.....$4 75



NO. 789. HOLLOW.

Set of 12.....$6 00

NO. 790. PROVIDED WITH A CENTERING PIVOT.

Set of 12... ....$6 50

Above cuts show all of Happersberger's Countersinks, except Nos. 770 and 771, which are on page 49.

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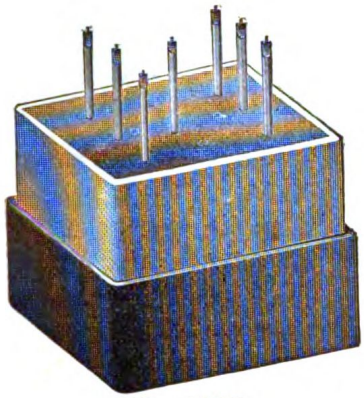
TOOLS C.

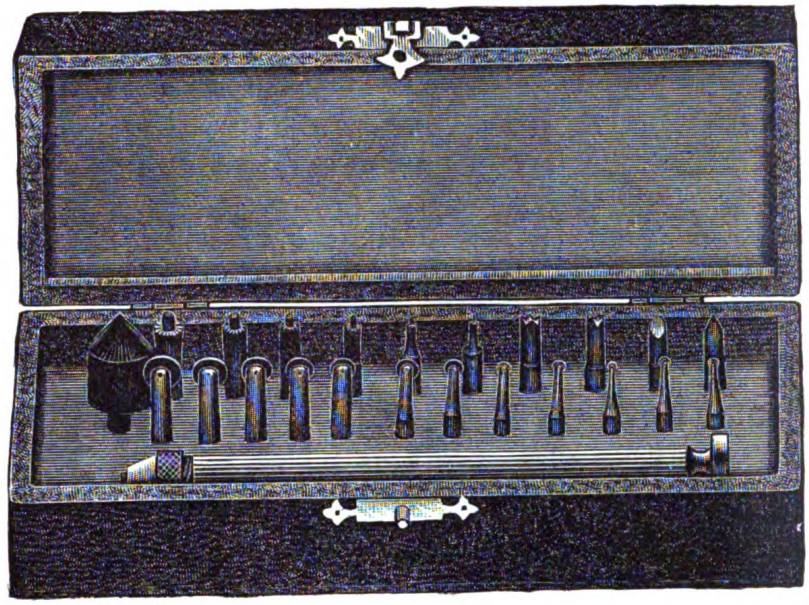


NO. 4188.

JEWEL-SCREW COUNTER-BORES.

Consisting of seven sizes of jewel-screw counterbores for leading American watches.

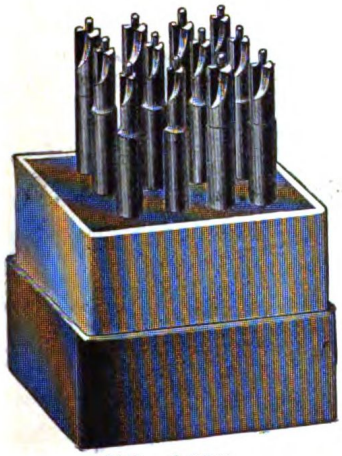
Price.....$0 75
Price for single case-screw counterbores..... 0 25
Price for single jewel-screw counterbores..... 0 15



NO. 4194.

SET OF 10 AND 12 COUNTERSINKS, OLD AND NEW STYLE COMBINED.

Price per set of 22, complete, as above.....$3 00

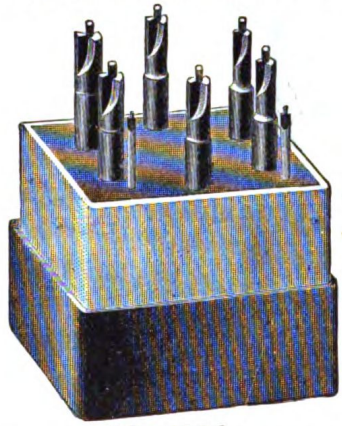


NO. 4189.

CASE-SCREW COUNTER-BORES.

Consisting of twelve sizes of case-screw counterbores for leading American watches.

Price.....$2 50
" .....each, 0 25



NO. 4191.

WALTHAM COUNTER-BORES.

Set for Waltham watches, consisting of six sizes of case-screw and two sizes of jewel-screw counterbores.

Price.....$1 50

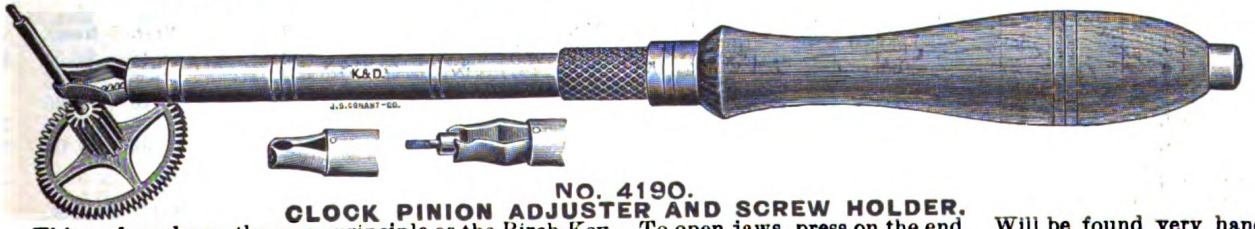
No. 4192. Set for Elgin watches, consisting of three sizes of case-screw and three sizes of jewel-screw counterbores.

Price $1 00

NO. 4193.

CLOCK CENTERING TOOL.

Price.....$0 30
" Nickel-plated..... 0 45



NO. 4190.

CLOCK PINION ADJUSTER AND SCREW HOLDER.

This tool works on the same principle as the Birch Key. To open jaws, press on the end. Will be found very handy in setting up clocks and in holding screws to reach in and start them where it could not be done with the fingers.

Price.....$0 50

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NO. 4195. SIZES AND PRICES OF BATTERSEA ROUND CLAY CRUCIBLES WITHOUT COVERS.

	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
Height....	2⅝	3	3⅛	4	4½	5	5⅝	5⅞	6⅝	7¼	8	8½	9⅜	10	11
Diameter..	1⅝	1⅞	2¼	2⅜	2⅞	3	3⅜	3¾	4⅜	4¾	5¼	5¾	6½	7	7¾
Each.....	$0 05	$0 05	$0 08	$0 08	$0 13	$0 15	$0 20	$0 22	$0 34	$0 37	$0 61	$0 74	$0 95	$ 1 40	$ 1 60
Per Dozen,	44	52	75	82	1 30	1 45	2 05	2 15	3 45	3 65	6 10	7 40	9 55	14 00	16 00

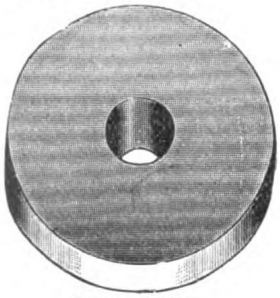
NO. 4196. COVERS FOR BATTERSEA ROUND CRUCIBLES.

	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
Each	$0 05	$0 05	$0 05	$0 05	$0 07	$0 10	$0 12	$0 14	$0 16	$0 23	$0 23	$0 26	$0 35	$0 43	$0 48
Per Dozen,	45	45	47	47	72	95	1 20	1 50	1 60	2 30	2 30	2 75	3 55	4 25	4 85

NO. 4195.

THE BATTERSEA CLAY CRUCIBLES.

The "Battersea" are suitable for all the operations in which the Hessian sand crucibles are used, and are greatly superior to them in absorbing but one-twelfth the weight of metal, in resisting the action of highly corrosive fluxes, in shape, and in being less heavy, in single sizes being sold at the same rate as nests.



NO. 4197.

NO. 4187.
CARBORUNDUM POWDER.
Per bottle..... .....$0 25
Per doz. bottles..... 2 00

CARBORUNDUM WHEELS AND CARBORUNDUM POWDER.

It is a new chemical compound produced by electrical methods. Does not burn the tools and is a very rapid cutter; the harder the material the greater the saving to you in the use of Carborundum Wheels; the Carborundum Powder is the first known substitute for the hard and expensive diamond dust; the Carborundum Powder will save you fully three-fourths of your time and permit you to do four times the work.

For jewelers' use is unsurpassed, harder than sapphire, ruby or corundum, better than diamantine. Lapidaries speak highly of the finer powders for polishing garnets, rubies and sapphires. For steel work in watch repairing the 4 Minute Powder is used for grinding and 12 and 15 Minute Powders for polishing in place of diamantine or other powder, can be used on any lap, wet or dry.

No.	Diam In.	Thickness in Inches.							
		⅛	¼	⅜	½	⅝	¾	⅞	1
4197....	1	$0 20	$0 20	$0 25	$0 30	$0 30	$0 35	$0 40	$0 45
4198....	1½	25	25	30	35	45	50	50	55
4199....	2	25	30	35	45	55	65	65	65
4200....	2½	30	35	40	55	65	70	70	70
4201....	3	35	40	50	60	70	85	85	85
4202....	3½		60	70	80	90	1 00	1 00	1 00
4203....	4		85	95	1 05	1 20	1 30	1 30	1 30
4204....	5		1 00	1 10	1 25	1 35	1 45	1 45	1 75
4205 ..	6		1 25	1 40	1 50	1 75	2 00	2 00	2 15

All our Carborundum Wheels are bushed with lead centres ready for use.

BLACK LEAD CRUCIBLES.

No.....	00	0	1	2
Height in inches.....	2	2⅜	3¼	3½
Price..... each,	$0 20	$0 20	$0 20	$0 20
No.....	3	4	5	6
Height in inches.....	4½	5	5¾	6¾
Price ..... each,	$0 25	$0 35	$0 45	$0 50
No...	7	8	9	10
Height in inches.....	6¼	6½	7	7⅜
Price.....each,	$0 60	$0 65	$0 70	$0 80

Larger sizes if required

SAND CRUCIBLES.

No.			Size of Largest.	Per Nest.	Doz. Nests.	100 Nests.
794.	Threes.	3 in nest,	3½x2¾,	$0 10	$0 50	$4 00
795.	Small Fives,	4 "	4 x3	10	75	5 75
796.	Large "	5 "	4½x3¾	15	1 25	9 25
797.	Sixes,	6 "	5¾x4¾	25	2 75	22 50
798.	Eights,	7 "	6¾x5¾	35	4 00	30 00

Larger sizes if wanted.

COVERS FOR SAND CRUCIBLES.

No. 794 c. Threes.	No. 795 c. Sml. Fives.	No. 796 c. Large Fives.	No. 797 c. Sixes.	No. 798 c. Eights.
Each, 10c.	10c.	10c.	15c.	15c.

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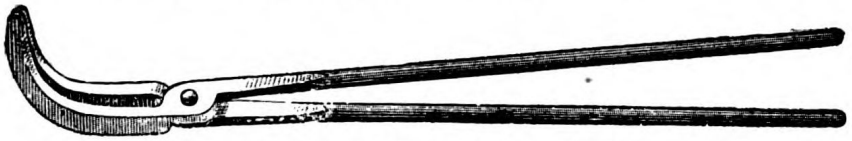
TOOLS C.

SPRING CRUCIBLE TONGS.

No	799	800	801	802
Length	18-inch.	20-inch.	24-inch.	30-inch.
Price ....each,	$0 50	$0 60	$0 75	$1 00



BENT CRUCIBLE TONGS.

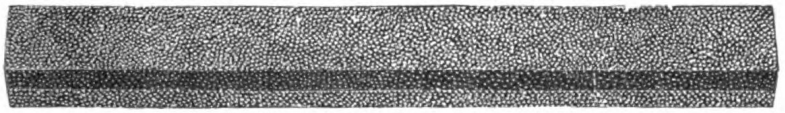
No	803	804	805	806
Length	18-inch.	20-inch.	24-inch.	26-inch.
Price ....each,	$0 60	$0 75	$1 00	$1 50

CRUCIBLE TONGS—(Round Neck).

No	807	808	809
Length	18-inch.	20-inch.	24-inch.
Price ....each,	$0 70	$0 85	$1 00

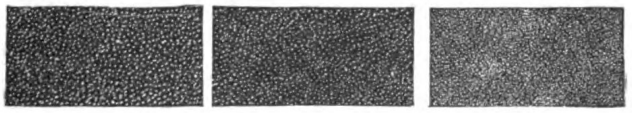
MALLEABLE IRON CRUCIBLE TONGS. Painted Black.

No. 810, 12 inches long, each, $0 40 No. 811, 17 inches long, each, $0 50



NO. 812. CORUNDUM SLIPS.

Assorted coarseness. ..Each, $0 20; oval, $0 25

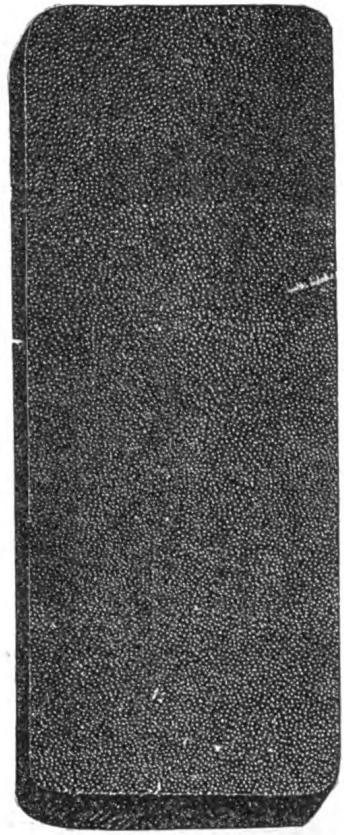


A. Coarse. B. Medium. C. Fine.

Cuts show grain of Corundum Wheels.

PRICE OF CORUNDUM WHEELS.

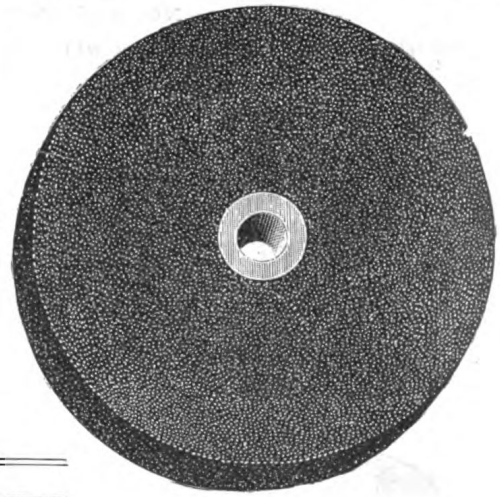
Diameter in inches.	THICKNESS IN INCHES.													
	¼	⅜	½	⅝	¾	1	1¼	1½	1¾	2	2¼	2½	2¾	3
1	$0 20	$0 20	$0 20	$0 25	$0 25	$0 30	$0 30	$0 35	$0 40	$0 45	$0 50	$0 60	$0 65	$0 70
1½	0 20	0 25	0 25	0 30	0 30	0 30	0 30	0 35	0 40	0 45	0 50	0 60	0 70	0 75
2	0 25	0 25	0 25	0 35	0 35	0 35	0 35	0 40	0 40	0 45	0 50	0 60	0 70	0 75
2½	0 30	0 30	0 35	0 35	0 35	0 40	0 50	0 55	0 70	0 70	0 75	0 85	0 90	0 95
3	0 45	0 45	0 45	0 55	0 60	0 60	0 70	0 80	0 90	1 00	1 05	1 15	1 20	1 30
3½	0 50	0 50	0 60	0 65	0 65	0 70	0 80	0 95	1 10	1 25	1 35	1 45	1 55	1 65
4	0 55	0 55	0 65	0 70	0 80	0 90	1 10	1 20	1 40	1 50	1 65	1 75	1 90	2 00
4½	0 55	0 55	0 70	0 80	0 90	1 05	1 25	1 40	1 55	1 70	1 95	2 05	2 20	2 40
5	0 80	0 80	0 80	0 90	0 95	1 30	1 55	1 80	2 00	2 00	2 20	2 65	2 80	3 10
6	1 05	1 05	1 05	1 20	1 35	1 75	2 20	2 45	2 90	3 15	3 60	2 85	4 30	4 75
7	1 15	1 15	1 20	1 40	1 60	2 45	2 90	3 35	3 50	4 10	4 55	4 90	5 50	5 95
8	1 40	1 40	1 40	1 75	1 95	2 55	3 20	3 65	4 30	4 80	5 40	5 95	6 50	7 60
9	1 75	1 75	1 75	2 10	2 30	3 00	3 70	4 20	5 10	5 60	6 20	6 90	7 55	8 20
10		2 10	2 10	2 20	2 80	3 60	4 20	5 10	5 65	6 70	7 35	8 05	8 85	9 60



No. 813 1-2.

CORUNDUM CUTTER STONE.

6x2x7-16 inch.. .....Each, $0 50
6x2x1 " ..... " 0 75



No. 813.

CORUNDUM WHEEL.

With Lead Center.

Corundum Wheels are especially adapted for grinding glass spectacle lenses, etc., and surpass as swift cutters anything heretofore placed before the trade.

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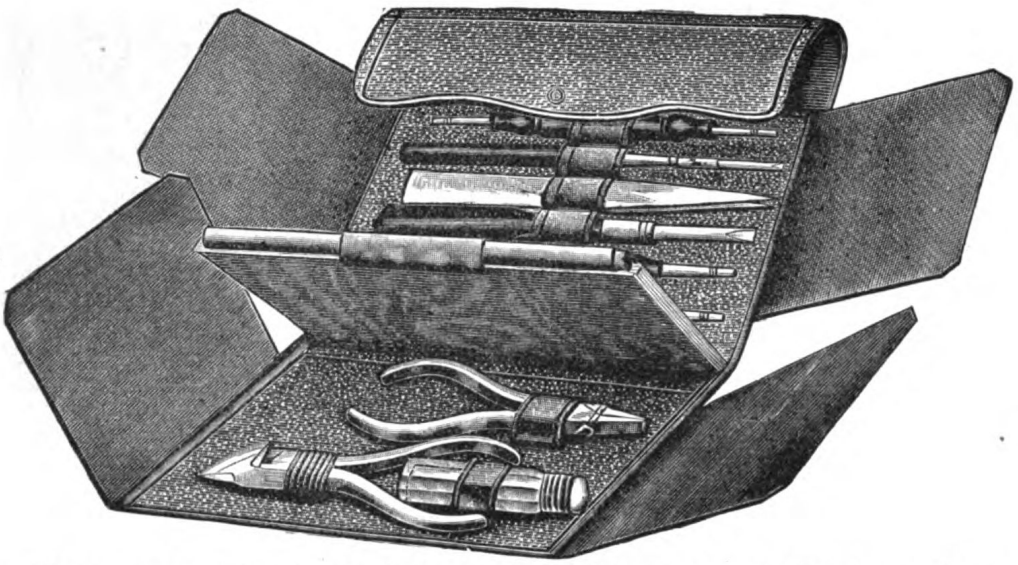
TOOLS D.



NO. 814. THE WATCHMAKERS' AND JEWELERS' POCKET COMPANION.

This cut represents a Leather Covered Book, and contains 1 cutting and 1 pair flat pliers; 1 material bottle, with screw top, 3 double-end Ebony Bench Keys, 2 Ebony Handle Screw Drivers, 1 pair fine Tweezers, and 1 Memorandum Book, and lock on the outside when closed. Size of Book when closed, 3¾x5¾ inches.

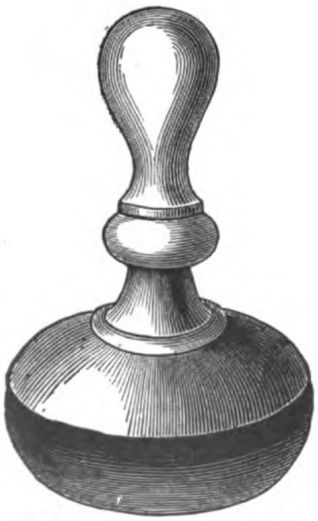
Price.....each, $3 00

Cut one-third size.

NO. 815. NEW STYLE DIAL FEET SOLDERING TOOL

The latest tool out for holding feet while soldering them on the dial. Made of Brass, and Ebony handle, neat and strong.

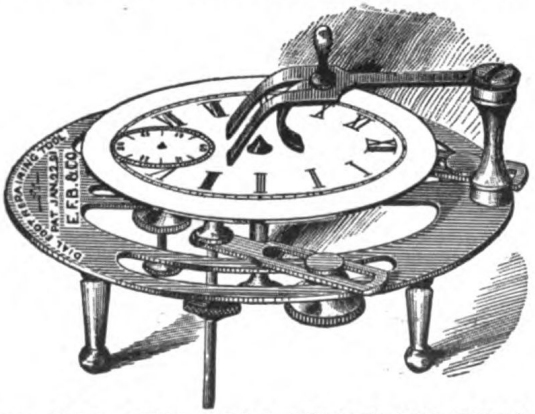
Price.....each, $0 50



NO. 818. DABBER.

Made of hard wood, padded and covered with kid, very useful in making proofs of engravings.

Price.....each, $0 90



NO. 819. DIAL FEET SOLDERING TOOL.

Price.....$1 50

NO. 820. DIAL FEET AND CEMENT IN BOX.

Price.....per box, $0 20

Cut is full size.

NO. 816. DIAL POST HOLDER.

This little tool will be found very useful while soldering dials to post.

Price.....each $0 15

NO. 817. BRASS DIAL FEET.

Per dozen.....$0 15

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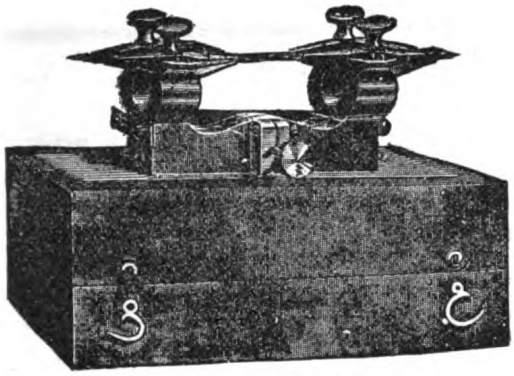
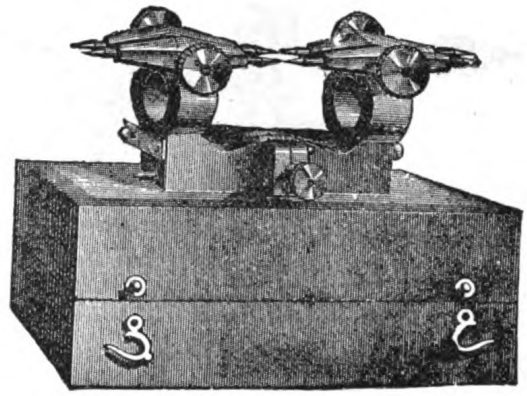
TOOLS D.



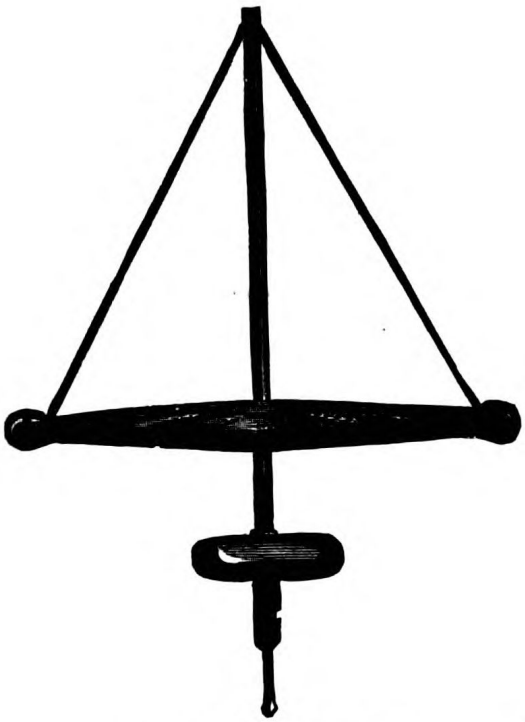
NO. 821. DEPTHING TOOL.

New Style, in case ....each, $1 85
Best quality make and finish..... " 2 35



NO. 822. DEPTHING TOOL.

Old Style in case, with screw on side. Price ....each, $1 75
Best quality, make and finish " .... " 2 00



NO. 824. PUMP DRILL.

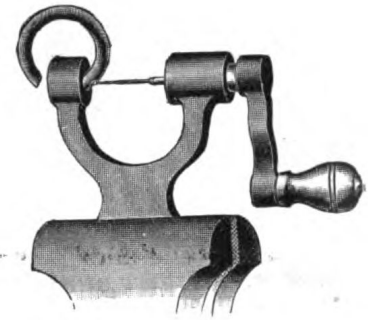
American make, superior quality, with heavy brass swing ball.

Price, Extra Large.....each, $1 25
" Large..... " 1 00

PUMP DRILL.

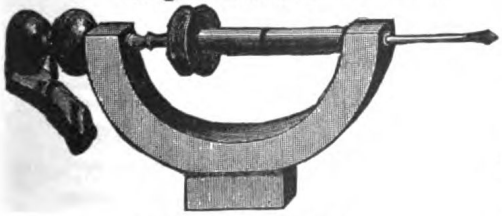
New style Speed Pump Drill, with brass balls.

No. 827. 10½ in. long $0 90
No. 828. 14 in. long 1 40
The best Drill out.



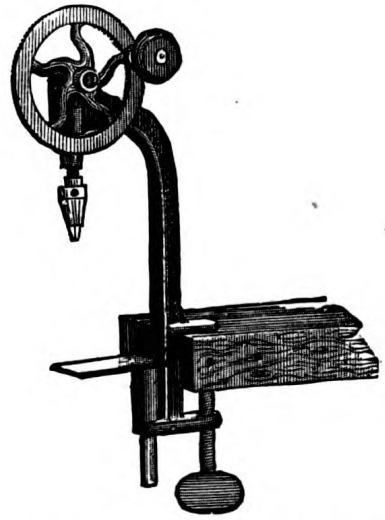
NO. 823. CARPENTERS' HANDY DRILL.

This is much better than the ordinary bow drill; cuts faster, with no danger of breaking the drill. Price each.$0 35



DRILL LATHES.

No. 826. Price ... .each, $0 25
No. 826½. " Larger size..... " 35
Nickel-plating..... ..... extra, 20



NO. 825. DRILL WITH SPLIT CHUCK.

Each $2 75

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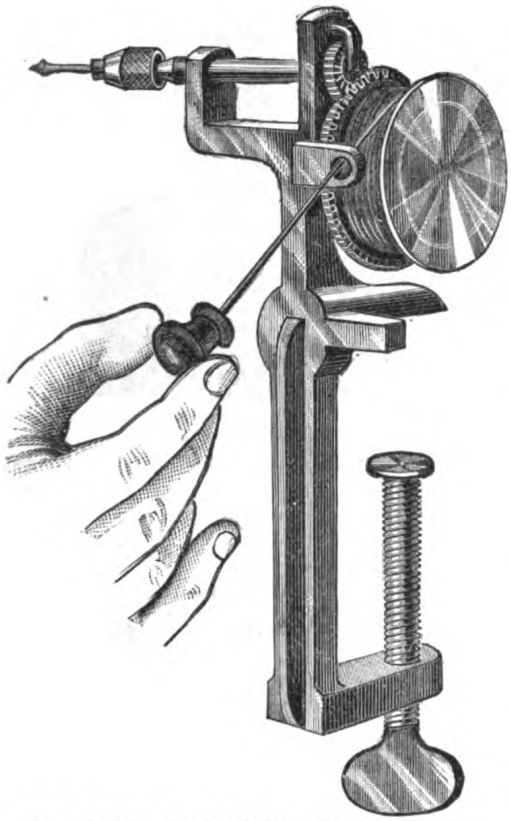
TOOLS D.



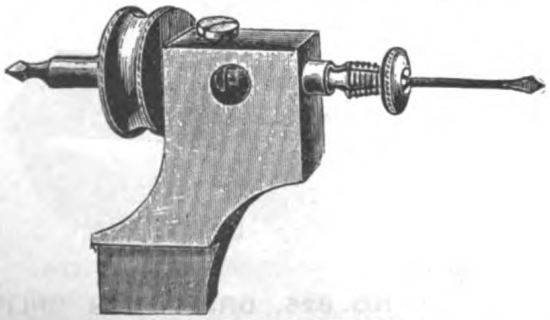
No. 838. PATENT SPRING DRILL.

For fine drilling, burring, reaming, etc. It can be screwed ready for use. Has a universal chuck attached, which enables you to change your drills quickly. It has a compound motion, which will enable you to drill five times as fast as by hand. If the fine wire that draws the spring should get hard and break, for a few cents you can get enough at any hardware store, and any one can attach the wire.

Price .....each, $1 50

No. 832. DRILL STOCK.

Adjustable, assorted sizes.....each, $0 25



No. 833. DRILL STOCK.

Price .....each, $0 30

No. 829. NEW STYLE ADJUSTABLE DRILL BOW.

Brass, with tempered Steel Wire ..... each, $0 25
Nickel-plated..... " 0 40

No. 830. WHALEBONE DRILL BOW.

Small .....$0 12 Large $0 25
Medium..... 15 Extra Large 50

No. 860. HORSE-HAIR DRILL BOW LINE.

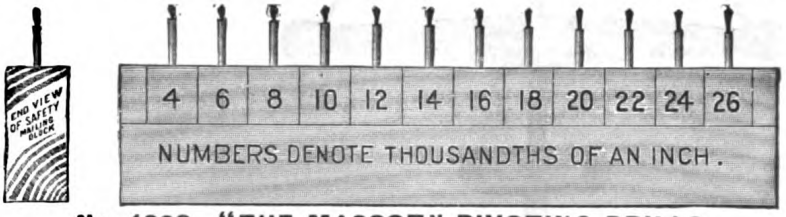
Bundle .....$0 05 Per Dozen Bundles $0 30

No. 4207. MASCOT DRILL HOLDER.

Price.....each, $0 50

PIVOT DRILLS.

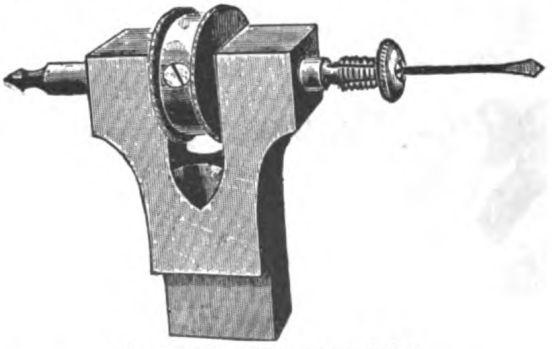
No. 834. Small..per dozen, $0 10 No. 835. Large..per dozen, $0 15



No. 4208. "THE MASCOT" PIVOTING DRILLS.

No. 14 Drill—Enlarged six times.

The Mascot Pivoting Drills.....per dozen, $0 50
The same Drills in separate sizes..... " 50



No. 836. DRILL STOCK.

Price .....each, $0 [illegible]
Drills for same, per dozen, 25 cents.

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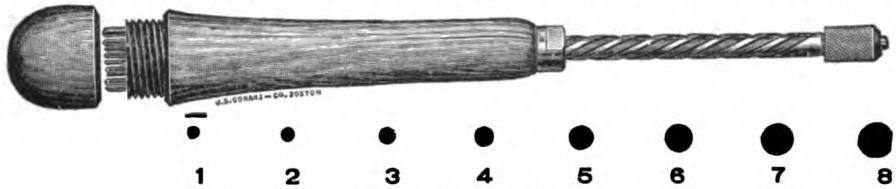
TOOLS D.

NO. 839. NEW STYLE ADJUSTABLE TWIST PUMP DRILL.

Total length, 9½ inches. A Brass Spiral Wire, as shown in cut between the two nuts, 5¾ inches long, running through the full length, to turn the drill, which can be used at both ends.

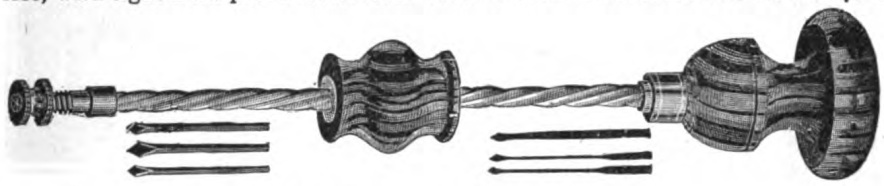
Price.....each $0 50



NO. 4210. GRAVES' AUTOMATIC DRILL.

With hollow handle; includes a set of 8 Drill Points the same size as shown in cut.

Price, with eight Drill points.....$1 50



ADJUSTABLE TWIST PUMP DRILL.

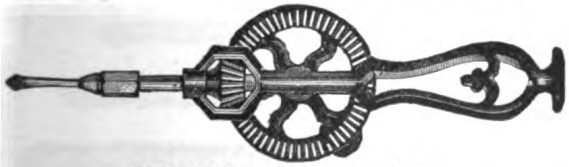
No. 842, Small.....each, $0 25
No. 843, Large..... " 40

NO. 844. HAND DRILL, WITH GEAR WHEEL.

Drill with Gear Wheel, with Adjustable Chuck.
Six Drills with each of the above Drill Stocks.
Price.....each, $1 25

ENGLISH DRAWTONG.

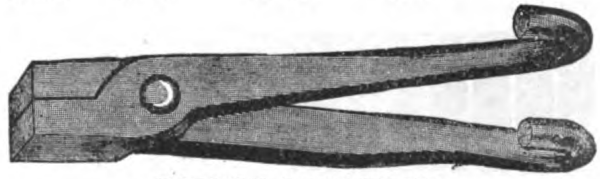
No.	847	848	849	850
Size	8 inches	10 inches	12 inches	14 inches.
Price, each	$0 75	$1 00	$1 25	$1 50



NO. 845. HAND DRILL.

This Drill Stock is eight inches in length. It has a brass chuck for holding the drill points, and holds the drill perfectly. Six superior Drill Points, of various sizes, sent with each hand drill.

Price.....each, $0 50

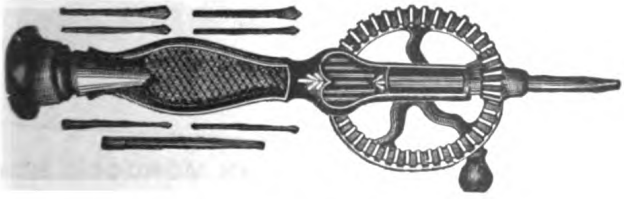


FRENCH DRAWTONG.

No.	851	852	853	854	855	856
Size	7½ in.	8 in.	9¼ in.	10 in.	10¼ in.	11 in.
Price, each	$1 25	1 50	1 75	1 90	2 15	2 40

NO. 831. DRILL STOCK.

Assorted sizes.....each, $0 15



NO. 846. DRILL, WITH GEAR WHEEL.

Six Drills with each Stock.....Price, each, $0 85

STEEL DIES.

Per Alphabet—No. 857..... 1-16 inch. $2 65
" No. 858 .....2-16 " 2 75
" No. 859.....3-16 " 3 75

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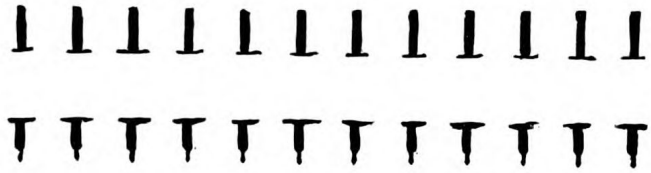
TOOLS D.

WATCHMAKERS' PIVOT DRILLS.

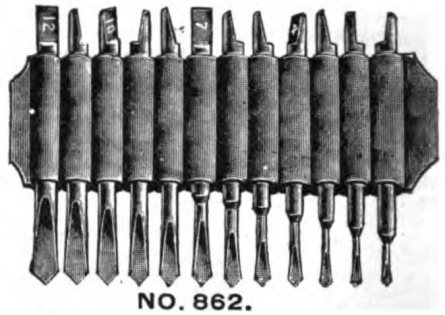


A. W. JOHANSON,

NO. 861.

This is the best Drill in the market, hardened and tempered by new process.

Price, per dozen.....$0 50

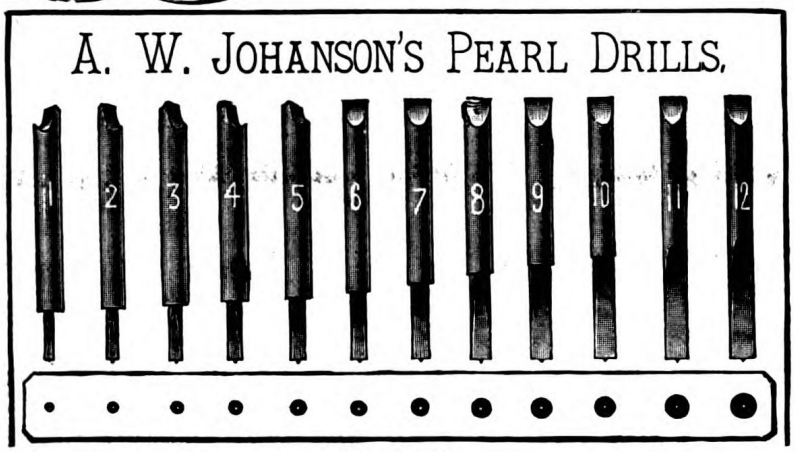


NO. 862.

JEWELER'S PUMP DRILLS.

Well tempered, highly finished and ready for use.

Price per dozen.....$0 75

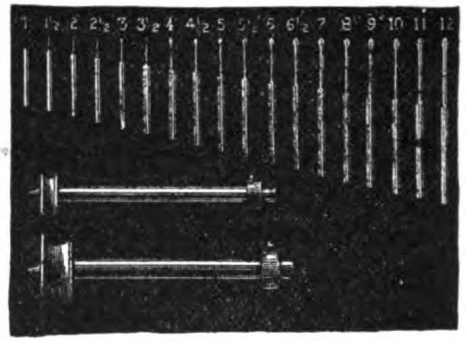


NO. 863.

JOHANSON'S PEARL DRILLS.

These Pearl Drills are an excellent recesser for screw heads, pearl and half-stones, etc.

Are made for Pump Drill holders, but can be used in any lathe. Finely finished, well tempered, and sold at a reasonable price. Sizes from 1 to 12 and 12 to 24. Above cut shows exact size from 1 to 12. Per doz. $1 00

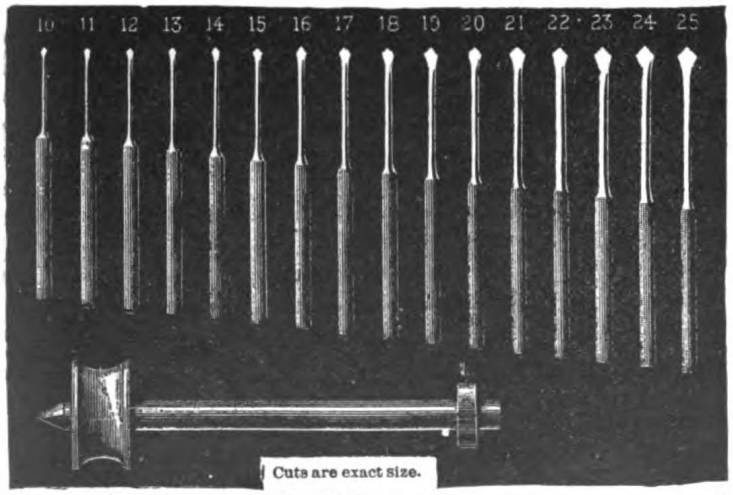


NO. 864.

Cuts are exact size.

FINISHED PIVOT DRILLS.

Nos. 1 to 12 on card.....$0 25
Drill Stocks for the same.....each, 15
Drills in separate numbers..per doz. 20
Drills sold half dozen in package only.



NO. 865.

AUTOMATIC FINISHED DRILLS BY SIZES.

Automatically, Nos. 10 to 25, best quality.....per set, $0 25
Drill Stocks for same.....each, 0 25
Drills in Separate Nos. as above.....per doz., 0 25

FINISHED PIVOT DRILLS IN MOROCCO BOX.

No. 866. Sets of 126, in Morocco Box..... $1 85
No. 867. Sets of 54, in Paper Box..... 0 75
No. 868. Sets of 126, in Paper Box..... 1 50

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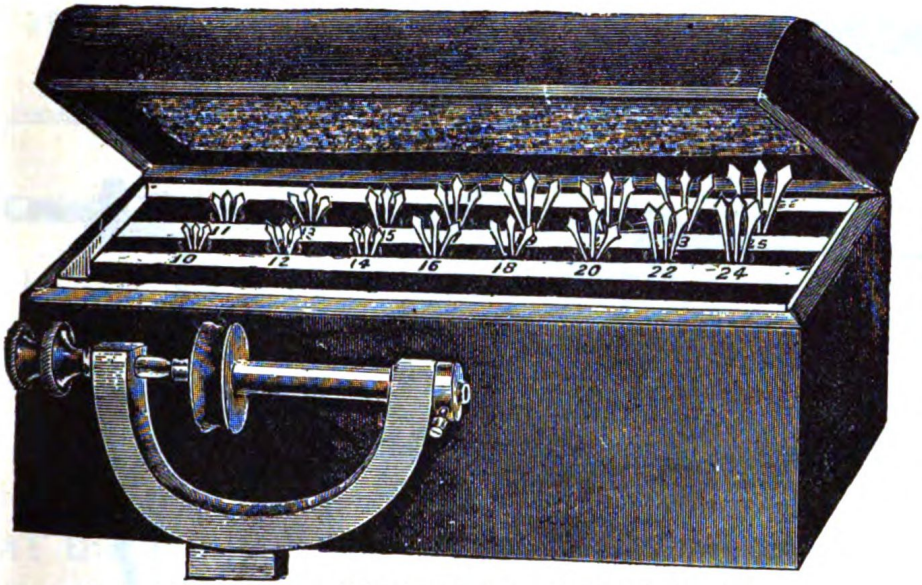
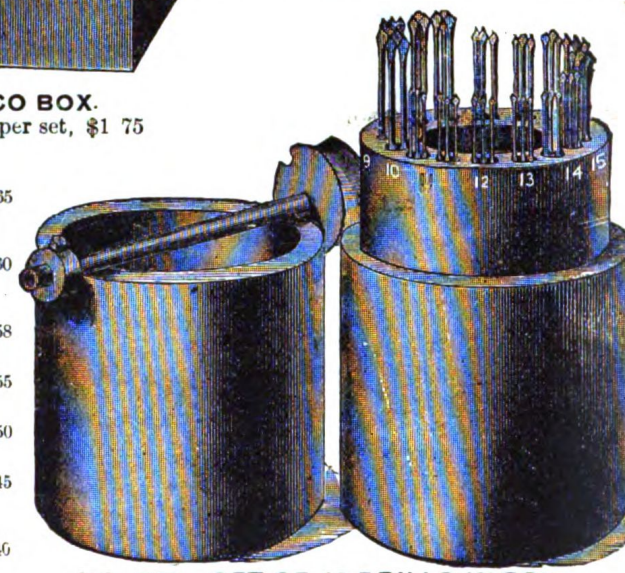
TOOLS D.

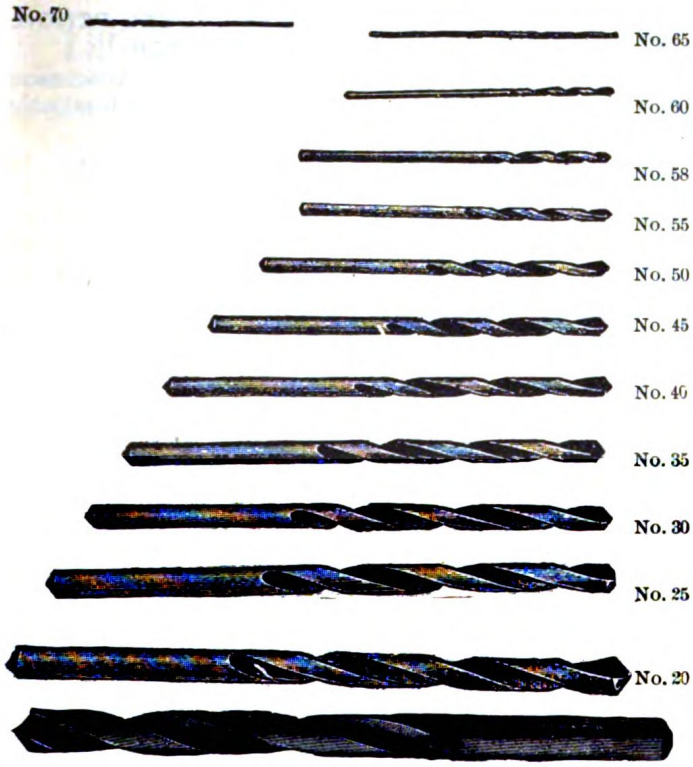


NO. 869. DRILLS WITH FRAME IN MOROCCO BOX.
Three of each number, 10 to 25.....per set, $1 75

NO. 870. MORSE TWIST DRILLS.
Sets of 36 in Box.....$2 35

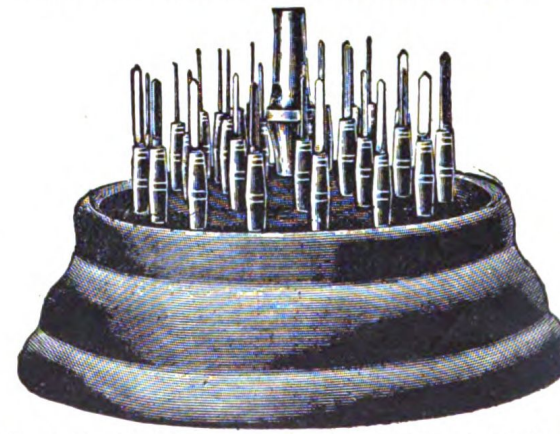


NO. 871. SET OF 48 DRILLS IN BOX.
Price with Drill Holder.....$1 00



NO. 870. MORSE'S TWIST DRILLS, IN SEPARATE SIZES.

Numbers by Stubs' Gauge.	Price Per Dozen.	Price Each.	Numbers by Stubs' Gauge.	Price Per Dozen.	Price Each.
1 to 5	$2 25	$0 25	31 to 33	$0 75	$0 10
6 to 10	2 15	20	33 to 40	75	10
11 to 15	2 00	20	41 to 45	75	10
16 to 20	1 55	15	46 to 50	70	10
21 to 25	1 20	15	51 to 60	60	10
26 to 30	1 00	10	61 to 80	60	10



NO. 872. STEHMAN, JENKS AND STEHMAN DRILLS.
Sets of 36, with stand and glass cover.....$3 75
No. 873. Chucks for holding drills, to fit any lathe.. 1 25
These drills are tempered and sharpened and every set warranted to be perfect

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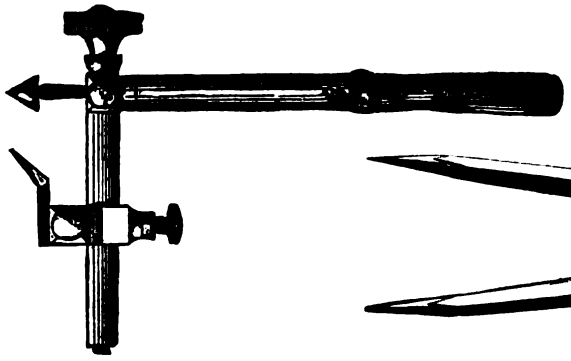
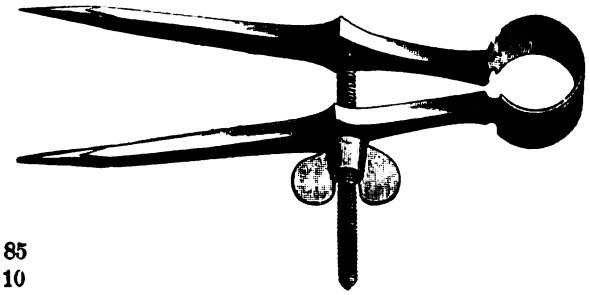
TOOLS D.



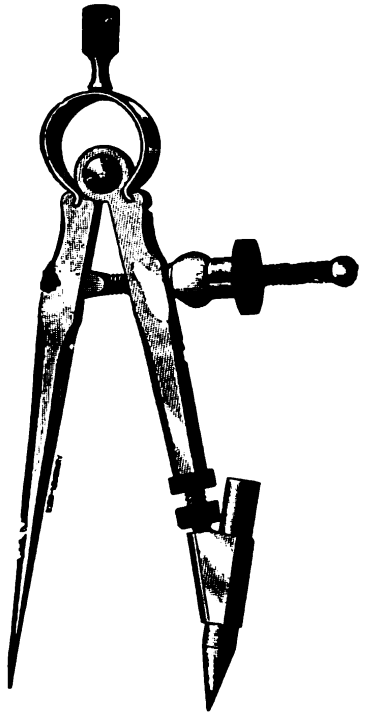
PUMP DIVIDERS.

No. 874. Price.....$0 85
No. 875. Nickel pltd..... 1 10



SPRING DIVIDER.

No. 881. 3 to 5 in., polished ..each $0 35
" 882. 3 to 5 in., nickel pltd. " 55
" 883. 3 to 4½ in., Stubs'... " 1 00

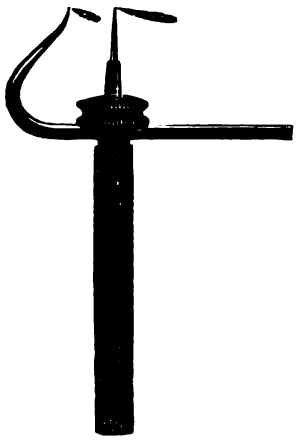


NO. 885. IDEAL PENCIL DIVIDER.

With the Thumb Attachment placed on the bow it is invaluable for scribing circles.

The holder part can be instantly removed and a steel point put in its place for 50 cents extra.

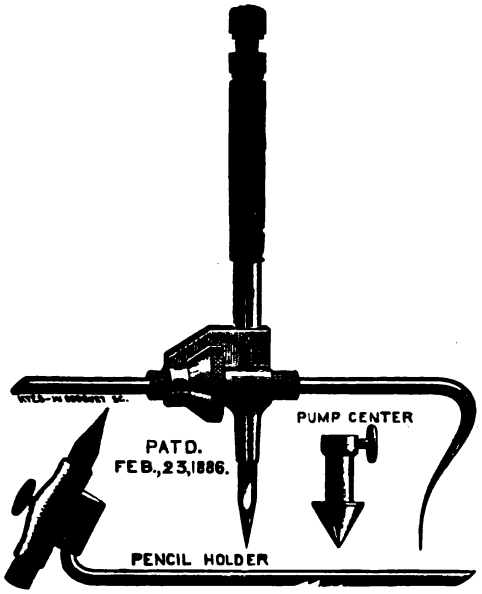
3 inch only, price.....$1 75



NO. 884. NEW DIVIDER.

Can be adjusted to form a circle of 2 inches diameter.

Price.... .... $0 25



PARALLEL DIVIDER.

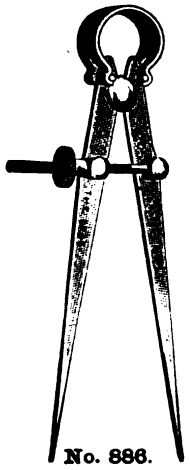
It is very easy to set, the needle being graduated to fractions of an inch, and by means of micrometer device the tool may be moved to a thousandth of an inch.

It can be used with pencil and pen if desired.

A Pump center can be furnished with tool by means of which a circle can be scribed on work laid out around a drilled hole, or BUSHING in a drill jig or other similar work.

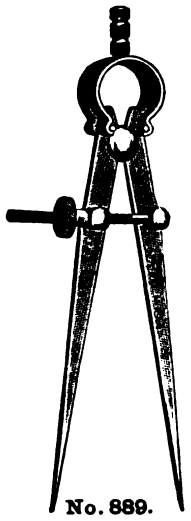
Fully hardened. Regular size will draw 7-inch circle.

No. 876. Price.....each $1 50
" 877. Long bar, 24-inch circle, " 50
" 879. Pump centre..... " 25
" 880. Lead Pencil Holder.... " 50



No. 886.

SPRING DIVIDERS.



No. 889.

No. 886.	2½ in.....each,	$0 65	With thumb attachment as above. No. 889.	2½ in.....each,	$0 70
" 887.	3 " ..... "	70	" 890.	3 " ..... "	75
" 888.	4 " ..... "	75	" 891.	4 " ..... "	85

Nickel plating extra..... $0 20

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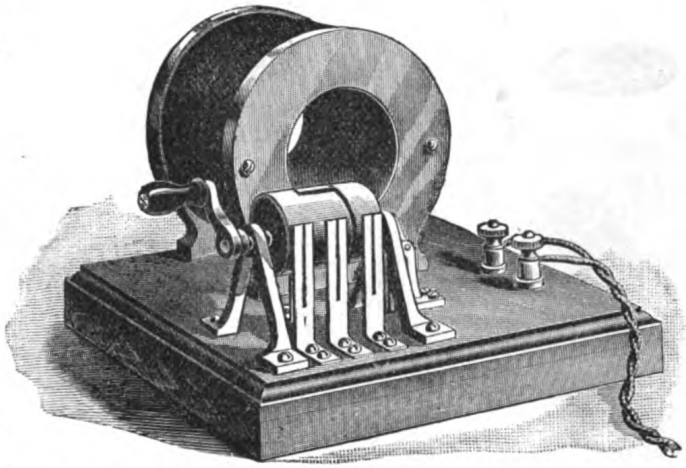
Swartchild & Co.

SOLE AGENTS
FOR THE

United States

Price, Complete, $15.00



Buy the

"BERLIN"

They are Reliable.

They are the Best.

Price, Complete, $15.00

No. 892. THE BERLIN DEMAGNETIZER.

Indispensable to the workshop of every watchmaker.
At the present day as necessary as a lathe.
As essential to test a watch for magnetism as any other ailment.

The Berlin Demagnetizer has power and volume possessed by no other, and is made for work. The low price will place it within reach of every watchmaker, and the machine will pay for itself by demagnetizing half a dozen watches.

The most scientific principles are employed in their construction, and yet can be handled successfully by any watchmaker.

THE BERLIN DEMAGNETIZER is manufactured for the Houston, Thompson and Edison systems. In ordering, state system of electric lighting used, and volts.

Full directions for using Demagnetizer with every machine.

Cut is Exact Size.

No. 892½. PEDERSEN'S DEMAGNETIZER.

No. 892½.

....THE....

Pedersen Demagnetizer.

PATENT APPLIED FOR.

Quickly and **Thoroughly** removes all traces of electricity from watches.

Can be used any place where alternating current incandescent lights are used.

Full directions with each instrument. In ordering state the voltage and the make of incandescent lamp used.

Price $3 50

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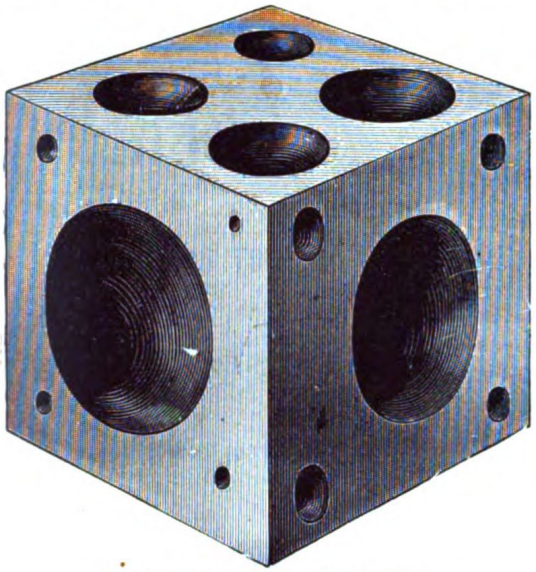
TOOLS D.

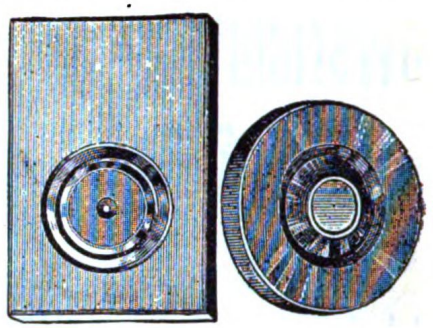


DAPPING DIE BLOCKS.

No. 895.	Iron, 1⅞	inch	each,	$1 50
" 896.	" 2⅛	"	"	1 75
" 897.	" 2⅜	"	"	2 25
" 898.	Brass, 1⅝	"	"	1 65
" 899.	" 1⅞	"	"	1 75
" 900.	" 2⅛	"	"	2 00
" 901.	" 2½	"	"	2 75
" 902.	" 2¾	"	"	4 00

DAPPING DIES AND CUTTERS.

No. 903.	Set of 18..	$2 00
" 904.	Set of 24..	2 65
" 905.	Set of 36..	4 00

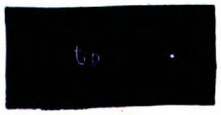


FULL SIZE. FULL SIZE.

RUBY AND SAPPHIRE DRAWPLATES.

	Size of hole.	Each.
No. 931.	.001	$10 00
" 932.	.002	7 50
" 933.	.003	5 00
" 934.	.004	2 50
" 935.	.005 to 020	1 25
" 936	.021 and .022	1 50
" 937.	.023 " .024	1 75
" 938.	.025 " .026	2 00
" 939.	.027 " .028	2 25
" 940.	029 " .030	2 50

Special sizes made to order. Wire drawn below .008 requires intermediate plates, owing to its want of tensile strength.



A. 20 holes.

B. 20 holes.

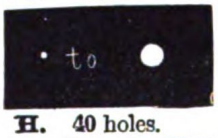
C. 20 holes.

D. 30 holes.

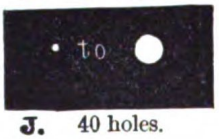
E. 30 holes.

F. 30 holes.

G. 30 holes.



H. 40 holes.

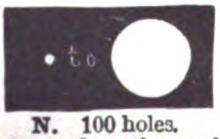


J. 40 holes.

K. 40 holes.

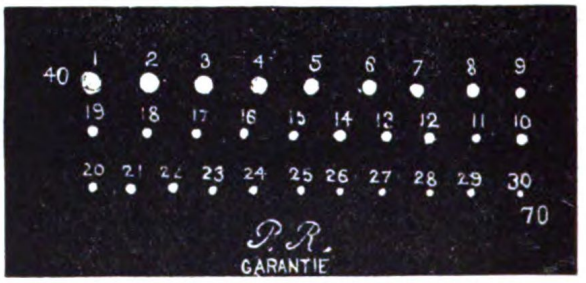
L. 60 holes.

M. 80 holes.



N. 100 holes.

Illustrations above show the smallest and largest hole in each number of round hole draw plates only.

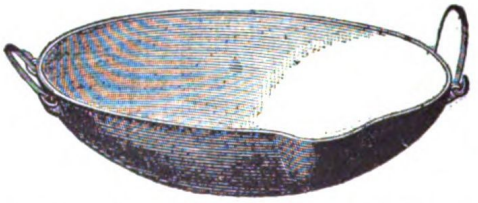


ROUND HOLE DRAW PLATE.

Full Length of this plate is 4½ inches long.

No. 906.	20 holes,	A, B or C	$0 60
" 907.	30 "	D or E, $0 90; F and G	1 25
" 908.	40 "	H..... 1 50; J and K	1 60
" 909.	60 "	L	2 40
" 910.	80 "	M	4 50
" 911.	100 "		5 50

See cuts to left showing different sizes of holes in Plates.



EVAPORATING DISHES, ENAMELED.

No. 913.	6 inch	each,	$0 75
" 914.	8 "	"	85
" 915.	10 "	"	1 00
" 916.	12 "	"	1 20
" 917.	14 "	"	1 60
" 918.	16 "	"	2 20
" 919.	18 "	"	3 00

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TOOLS D.

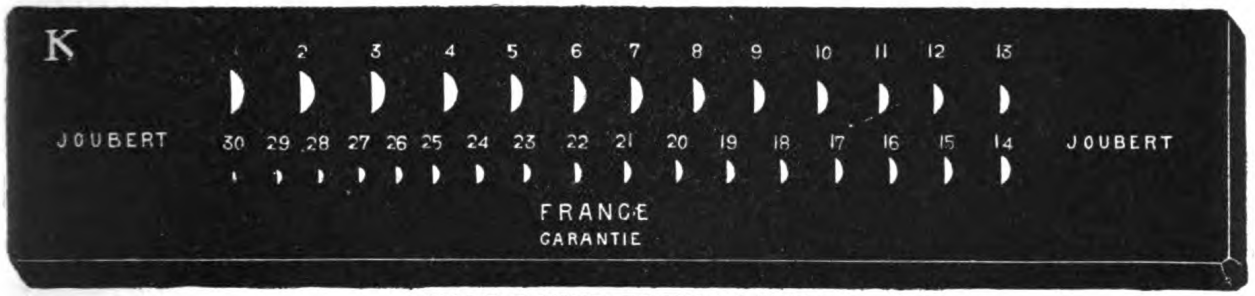
Cut shows smallest to largest size.

L. 30 Holes.

Cut shows smallest to largest size.

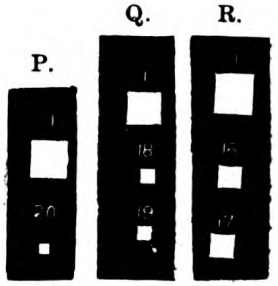
M. 40 Holes.

N. 40 Holes.



HALF ROUND DRAW PLATES.

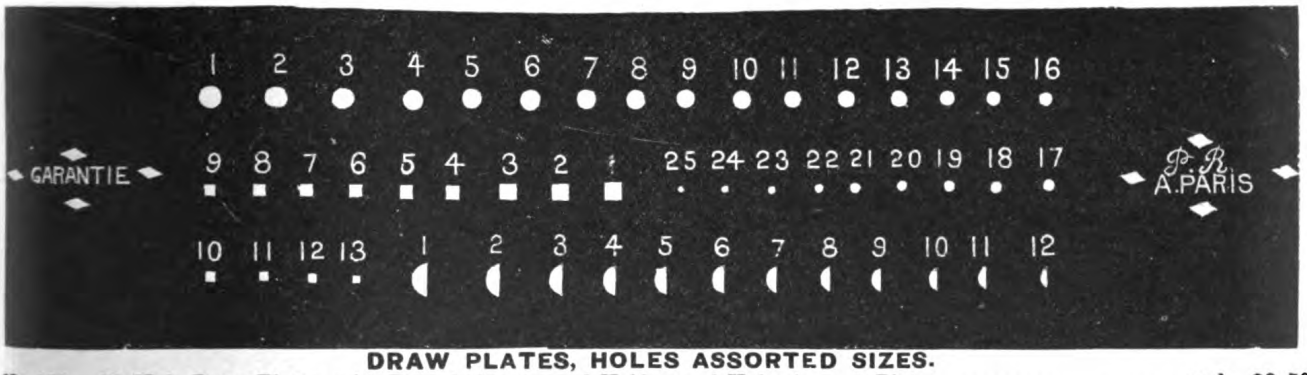
No. 919½. 20-Hole Draw Plate, best quality... each, $1 25
No. 921½. 30-Hole L " " .... " 2 00
No. 920½. 30-Hole K Draw Plate, best quality..each, $1 50
No. 922. 40-Hole M " " .. " 2 25
No. 923. 40-Hole N Draw Plate, best quality....each, $3 00



20-Hole. 30-Hole. 30-Hole.

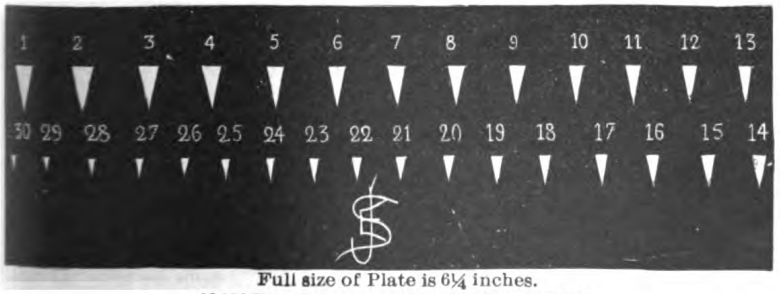
SQUARE DRAW PLATES.

No. 924. 20-Hole O Draw Plates, best quality..each, $0 75
No. 926. 30-Hole Q " " .. " 1 50
No. 928½ 40-Hole S " " .. " 2 75
No. 925. 20-Hole P Draw Plates, best quality..each, $1 00
No. 927. 30-Hole R " " .. " 1 75
No. 929. 40-Hole T " " .. " 3 00



DRAW PLATES, HOLES ASSORTED SIZES.

No. 930. 50-Hole Draw Plates, with Round, Square and Half-round Holes in each Plate.....each, $2 50
No. 931. 60-Hole " " " " " " " " " ..... " 3 25
No. 942. 100-Hole French Draw Plates, with Round, Square and Half-round Holes in each Plate, each.....$7 00 to $9 00
No. 943. 10-Hole Oval Draw Plates.....each, 2 50
No. 944. 15-Hole " " ..... " 3 75
No. 945. 20-Hole " " ..... " 5 00



Full size of Plate is 6¼ inches.

KNIFE EDGE DRAW PLATES.

No. 4210. 20 Holes.....$2 00 No. 4211. 30 Holes.....$3 00

Full length of this Plate is 4 inches.

FILIGREE DRAW PLATE.

No. 4212. 20 Holes.....$1 00

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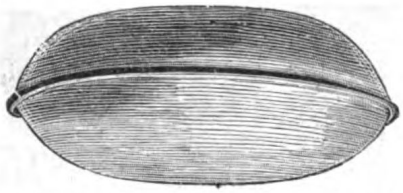
TOOLS E.

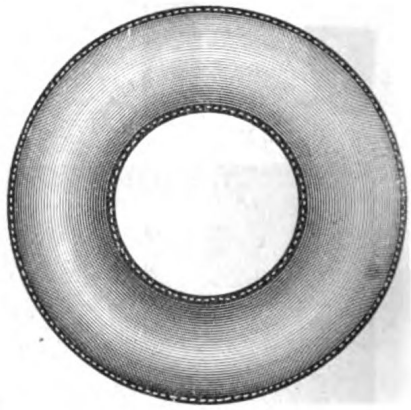
NO. 946. ENGRAVER'S TRANSFER WAX.

Price.....$0 50



ENGRAVER'S PAD. SOLID.

No. 951.	3 inch	.....	each,	$0 40
" 952.	4 "	.....	"	45
" 953.	5 "	.....	"	50
" 954.	6 "	.....	"	65
" 955.	7 "	.....	"	1 00
" 956.	8 "	.....	"	1 15



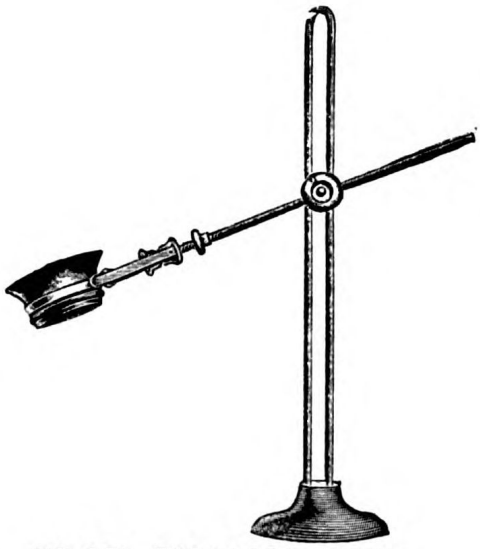
NO. 2. ENGRAVER'S PAD RING.

No. 957.	5 inch	.....	each,	$0 65
" 958.	6 "	.....	"	0 80
" 959	7 "	.....	"	1 00

These pads are the best quality made

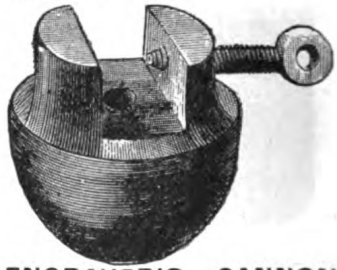
NO. 947. EYE GLASS STAND.

Small.....$0 75
" nickel-plated..... 1 10
No. 948. Large telescopic..... 1 75
" 949. " nickel-plated 2 25



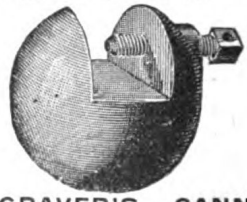
NO. 950. EYE GLASS STAND.

Bronze Base.....$1 25



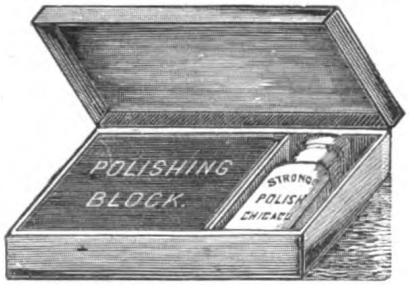
ENGRAVER'S CANNON BALL.

No. 962. 4 inch.....$1 25
" 963. 4½ inch..... 1 50
" 964. 5 inch..... 1 75



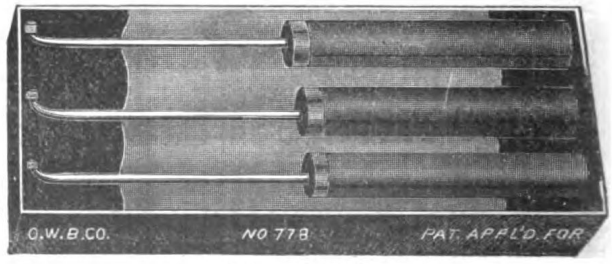
ENGRAVER'S CANNON BALL.

No. 965. 4 inch.....$1 25
" 966. 4½ inch..... 1 50
" 967. 5 inch..... 1 75



ENGRAVER'S POLISHING BLOCK. AND POLISH IN BOX.

No. 960. Price.....$0 60

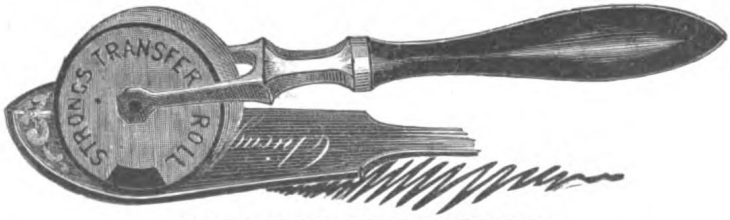


Cut one-half size.

NO. 968½. ENGRAVERS' NEW ROLLER MATTING TOOLS.

With these tools, matting can be done much quicker and more satisfactorily than with hammer and punches. Made in three sizes.

Price.....each set of 3, $1 50



ENGRAVER'S TRANSFER ROLL.

No. 961. Price.....Each, $0 25

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DEPARTMENT E.

POINTED EYE GLASS.

No. 970.....each, $0 20
" 970 Best Quality.. 25

POINTED EYE GLASS.

No. 971. Double.....$0 40
" 972. Best Lens.... 50

EYE GLASS.

No. 973.....each, $0 20
" 974 Best Quality.. 25
1½-inch Focus..... 25

REFLECTING EYE GLASS.

No. 975.....each, $0 50

CORK EYE GLASS.

No. 976. .....each, $0 25

EYE GLASS.

Aluminum Eye Glass, very light and cool.

No. 977. First Quality....each, $0 35
" 978. Second " .... " 25

ENGRAVER'S EYE GLASS.

		Each
No. 980.	Horn, Single Lens, 2 in..	$0 85
" 981.	" Double " 2 " ..	1 25
" 982.	Rubber, " " 1½" ..	1 15
" 983.	" " " 1¾" ..	1 25
" 984.	" " " 2 " ..	2 00
" 985.	" " " 2¼" ..	2 50
" 986.	" Single " 1½" ..	50
" 987.	" " " 2 " ..	75
" 988.	" " " 2¼" ..	1 00
" 989.	" " " 2½" ..	1 25

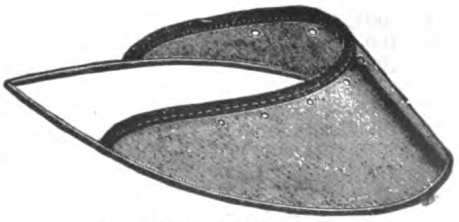
EYE GLASS.

No. 991 .....each, $0 30
" 991½ Best Lens and Rubber. 35

NO. 979. AIRIFIED EYE GLASS.

This Eye Glass has a wire gauze as shown in cut, giving both light and ventilation to the eye.

Price.....each, $0 25



NO. 990. EYE SHADE.

Price, each, $0 10; per dozen, $1 00

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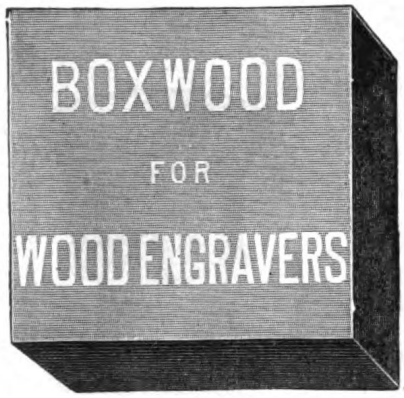
TOOLS E.



NO. 1024.

ENGRAVER'S BOXWOOD.

For Practice, 2x3 . . . . per doz. $3 00
For Fine Work, any size, per Square inch surface. 05

ENGRAVERS' CARD AND PRACTICE COPPER PLATE.

The Best in the Market.

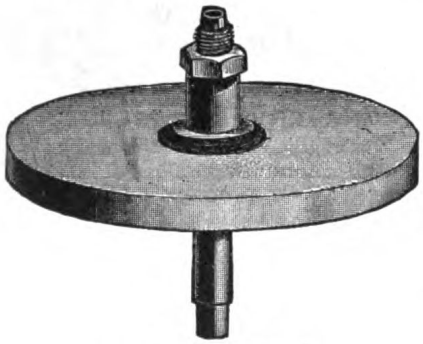
No. 1016.	2⅜x3¾,	Gauge 19..	each, $0 20	No. 1019.	3¾x5¼,	Gauge 17..	each, $0 50
" 1017.	2¾x4¼	" 19..	" 30	" 1020.	4⅛x5¼	" 17..	" 65
" 1018.	3¼x5	" 17..	" 40	" 1021.	4½x6¾	" 17..	" 85

We can furnish any size desired in proportion to the above rate.

No. 1022. Quality, Copper, Nickel Plated, 2⅜x3¾. . . . each, $0 10 Per doz., $0 75
" 1023. " " " " 3¾x5¼ . . . " 15 " 1 25

EMERY FILES.

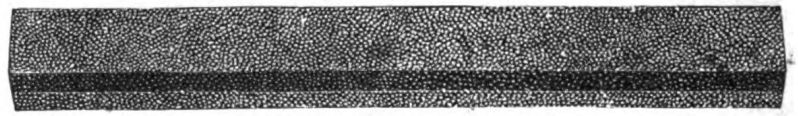
No. 1025½ Small, grades ranging from 00 to 4. . . . . each, $0 15
" 1025. Medium, " " " 00 to 4. . . . . " 20
" 1026. Large, " " " 00 to 4. . . . . " 25



EMERY WHEELS.

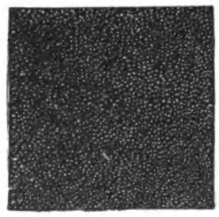
No. 992.	1 x¼	in. diam.	each,	$0 10
" 993.	1 x½	"	"	15
" 994.	1⅜x¼	"	"	15
" 995.	1⅜x 5/16	"	"	20
" 996.	1⅜x½	"	"	25
" 997.	1¾x¼	"	"	25
" 998.	1¾x 7/16	"	"	25
" 999	1¾x¾	"	"	25
" 1000.	2 x¼	"	"	20
" 1001.	2 x½	"	"	25
" 1002.	2 x¾	"	"	35
" 1003.	2 x1	"	"	60
" 1004.	2½x½	"	"	40
" 1005.	2½x¾	"	"	40
" 1006.	2½x1	"	"	40
" 1007.	3 x½	"	"	45
" 1008.	3 x¾	"	"	50
" 1009.	3 x1	"	"	60
" 1010.	3½x½	"	"	40
" 1011.	3½x¾	"	"	50
" 1012.	3½x1	"	"	60
" 1013.	4 x½	"	"	50
" 1014.	4 x¾	"	"	60
" 1015.	4 x1	"	"	75

Best Grades from No. 00 to No. 4.

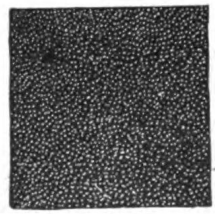


SQUARE EMERY SLIPS.

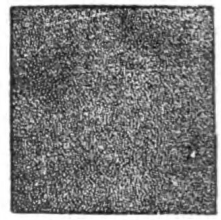
	No. 1026½.	No. 1027.	No. 1028.	No. 1029.
Without Handles, Grades 00 to 2. . . each,	$0 25	$0 30	$0 35	$0 40



NO. 1030.
Medium.



NO. 1031.
Coarse.



NO. 1032.
Fine.

EMERY CLOTH.

Nos. 000 to 4. Per Sheet. . . . . $0 10 Per dozen, large sheets. $0 50

NO. 1033. EMERY PAPER.

Nos. 0000, Finest, to No. 3, Coarse. . . . . per sheet, $0 05 Per dozen, $0 20
No. 1034. Emery Powder. . . . . per lb. $0 35 In 10-lb. Cases, per lb. $0 25
State if fine or coarse grade is wanted.

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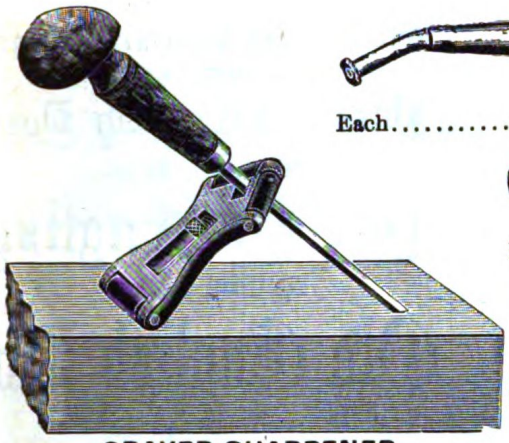
TOOLS E.



NO. 4217. ROULETTE ETCHING TOOL.

Each.....$1 00 Per set of 12.....$11 00

NO. 4218. IDE'S ETCHING POINTS.

Price, Nickle-plated..... each, $0 15

NO. 4219. RUBBER HANDLED TRACER. TEMPERED POINT.

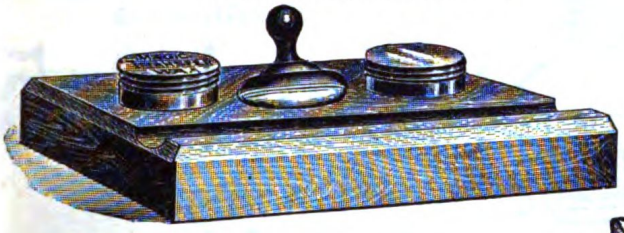
Price.....$0 25

GRAVER SHARPENER.

Self-adjusting, for either side of square or lozenge Graver.

No. 4213. Price.....$1 00

" Nickel-plated..... 1 25



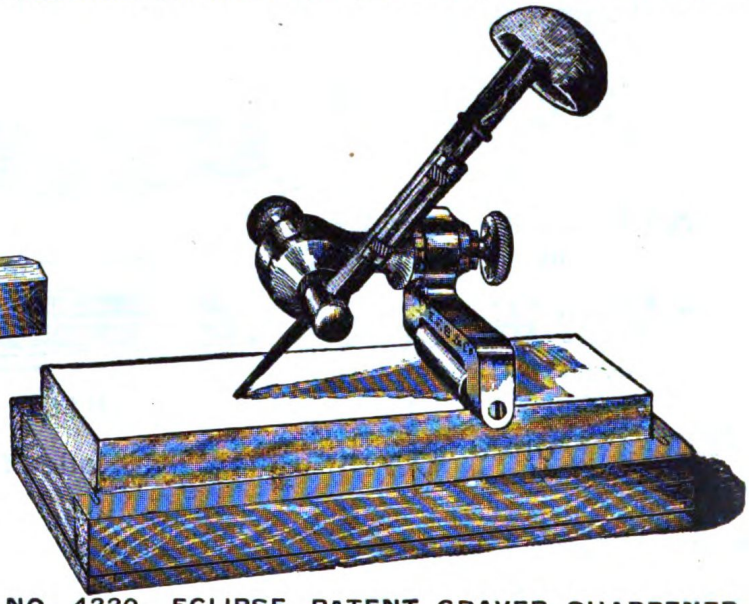
NO. 4214. ENGRAVERS' COMPANION.

The Engravers' Companion will be found of value to all engravers in all classes of work, and will, especially, meet the requirements of general engravers. Companion consists of one jar of Dimming Wax, Whitening Puff, and one jar of Magic Transfer Wax, the whole mounted on a finely-finished, hardwood base. Dimming Wax, light blue, is used to prepare surfaces to be engraved, as follows:

Rub end of forefinger onto wax; next, pat surface to be engraved with end of finger until an even surface is obtained; now gently pat whitening puff over waxed surface—this will produce a fine chalky surface that you will leave on until the job is completed. Use Duplex Tracer to lay off the work.

When job is completed wipe article with soft cloth or chamois skin; whitening will act as a cleanser.

Price.....$1 00



NO. 4220. ECLIPSE PATENT GRAVER SHARPENER.

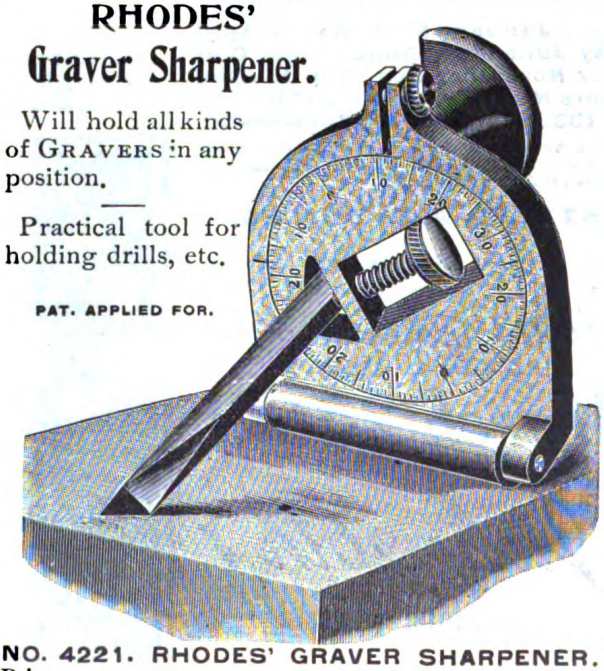
Price.....$1 75 Graver Sharpener, with 5-inch stone.....$3 00

RHODES'
Graver Sharpener.

Will hold all kinds of GRAVERS in any position.

Practical tool for holding drills, etc.

PAT. APPLIED FOR.



NO. 4221. RHODES' GRAVER SHARPENER.

Price.....$2 25

NO. 4215. DUPLEX TRACER AND SELF-DIVIDING STRAIGHT EDGE.

Price.....$0 50

No. 4216. Complete with Engravers' Companion 1 50

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TOOLS E.

PRICE PER SET.

Script Engraving Type, 50

No. 1035. $1 00

Script Engraving Type 51

No. 1036. $1 00

Script Engraving 52

No. 1037. $1 00

Script Engrav 53

No. 1038. $1 25

Script Eng 54

No. 1039. $1 50

Queen Ann Text Engraving Type 1 2 3

No. 1040. $1 00

Paper Money Will Alway

No. 1041. $1 25

Paper Money Will

No. 1042. $1 50

Old English Dovetailed Engraving Type.

Eng. Sets for Coffin Plates.

Made in solid words or Logotypes, each set contains the following:

Died, January Febr March April May June July August Sept October November Dec st d th Aged Years Mos Days AGED DIED. 1 1 1 2223334445556667778889900

With the different sizes you can "lay out" on any size plate, using different type for each line. A Grooved Holder with each set.

STYLES AND PRICES.

No. 1043. $1 00

Years. Mos 454

No. 1044. 75 Cts.

March 25th 1

No. 1045. $1 00

July 26th, 1

No. 1046. $1 00

EACH BOX

CONTAINS

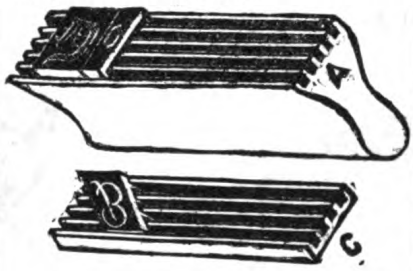
CAPITALS,

SCRIPTS,

Numerals and Dates,

Etc., Etc.

In using, set up the desired inscription as shown in the cuts, rub the finger over coarse scrubbing soap, then over the face of the type, then make the impression. If the surface is convex, rock it a trifle; if concave, use the flexible holder C.



FONTS.

Patent Dovetailed Rubber Engraving Type.

The above cuts represent the various styles of Rubber type which we carry, they having been pronounced the best type for the least money, being made in the most approved style and patterns, while by the use of them you can do your own work.

Each set in box with either Fonts A or C as type holder, according to size of type, as shown above.

PRICE PER SET.

Old English Dovetailed Engra

No. 1047. $1 00

Pure Old English Dove

No. 1048. $1 00

Pur Old English

No. 1049. $1 25

Old English Do

No. 1050, $1 50

Pat Rubber 2

No. 1051. $1 75

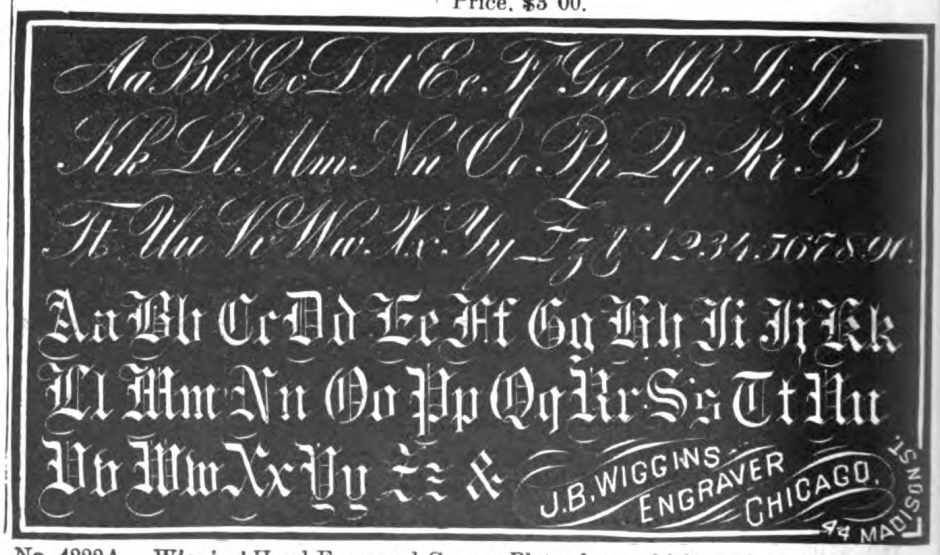
Hand Pr 5

No. 1052. $2 00

May

No. 1053. $3 00

Nos. 1051 and 1052 have Figures. Very useful for price tickets. We keep in stock a jewelers' Ticket Outfit of 125 words. Price, $3 00.



No. 4222A. Wiggins' Hand-Engraved Copper Plate, from which any letter may be transferred to the article you wish to engrave. Price $1 25

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TOOLS E.

ENGRAVERS' METAL TRANSFER TYPE AND RUBBER PRINTING OUTFIT.

No. 4223. Type, all capitals.....per set, $1 75
No. 4224. " " small..... " 1 50

DIRECTIONS FOR TRANSFERRING

Fill in Letter or Figure selected with Transfer Wax, leaving surface of plate clean; place on same a piece of tissue paper, which gently press over with finger or Transfer Roll. This will leave the impression on the paper, which can be transferred to its proper position in the manner above indicated.

No. 4229. Type, all capitals.....per set, $2 00
No. 4230. " " small..... " 1 75

No. 4225. Type, all capitals.....per set, $2 75
No. 4226. " " small..... " 1 75

No. 4231. Type, Old English, all capitals, per set, $2 75
No. 4232. " " " " small, " 2 50

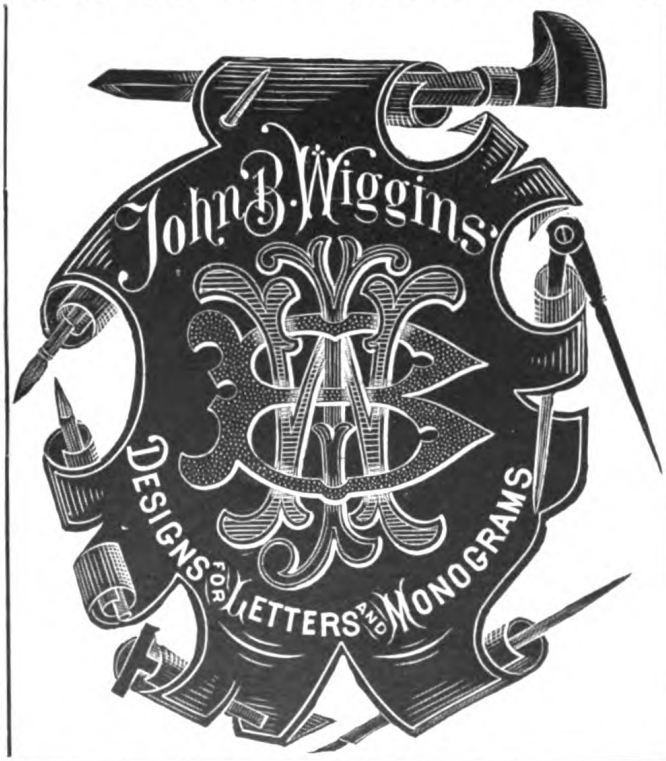
No. 4227 Type, Old English, all capitals, per set.....$3 00
No. 4228. Type, Old English, all small, per set, 2 75

No. 4233. Holders for above type.....each, $0 25

The above Type is warranted to line up perfectly, and being made of metal will last a lifetime.

J. B. WIGGINS' MONOGRAM, DESIGN AND TEXT BOOK.

Contains 17 Pages, German Text Script, Roman and Rustic, with Monograms and Script Cyphers; Also Complete Instruction in Engraving for beginners. All Engraved from Copper Plate.



A _____

First-Class Instruction Book for Engravers

Size of Book, 4 x 8.

Price.....$1 50

NO. 4234.

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DIETZ'S Engraver's Type.

NEW PROCESS.

Saves Time and a Great Help.

Each Outfit put up in a neat box containing **150 Pieces of Type,** consisting of **2 Cap A's and 3 small a's,** figures, points, spaces, Tweezers, and two Type Holders.

MADE IN NINE SIZES. SEE LAST PAGE.

A Aaaa B Bbbb C
Cccc D Dddd E Eeeee
Y Yyy Zzz & ....,,,:
1 1 2 2 3 3 4 4 5 5 6 6 7 7 8.

Does away with all Tracing.
The Letters are Printed upon the Article.
Perfect and Uniform Work is the result.
Every Engraver or Beginner should have an Outfit.

SPECIMENS OF TYPE — 2 A 3 a FONTS.

Gertrude R. Brown.
No. 01. $1.75.

Gertrude L. Holmes.
No. 02. $1.75.

Minnie S. Foster.
No. 03. $2.50

Newton.
No. 04. $3.50.

Sir Walter Scott.
No. 05. $1.50.

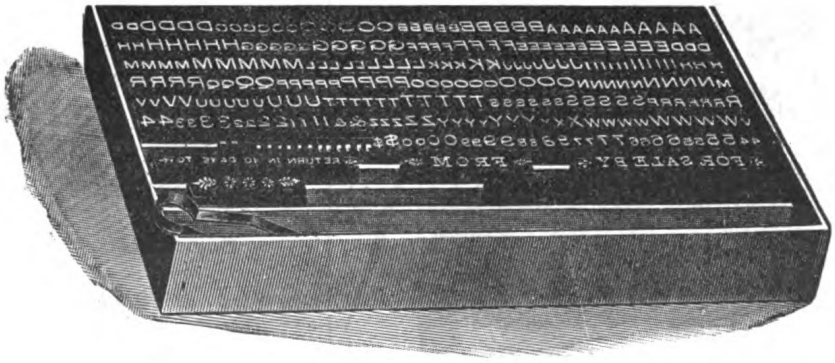
Silas B. Robinson, Jr.
No. 06. $1.25.

Adamson.
No. 07. $3.50.

BORN MAY 2.
4 A. No. 08. $2.00.

AAaaaBBb
No. 09. $3.00.

DIRECTIONS.—Set up the desired inscription, rub the finger over Engravers' Transfer wax, then over the face of the type; then make the impression.



SPECIMEN TYPE. OUTFIT No. 40.

AAAAAAAAAAABBBBBBBBBBCCCCCC
1 1 11 22 22 33 33 44 44 55 55 66 66 77 77 88
&& AND %....,,,--'' * * * ✳ ⇐ ☆ ⇐
FOR SALE BY FROM RETURN IN 10 DAYS TO

Outfit No. 40

$2.00.— IF NOT SATISFACTORY MONEY REFUNDED.

Will do all your Small Printing and furnish you with **1000** Different Rubber Stamps.

This Outfit Contains 285 Pieces.

Consists of an **Eleven A Font,** both large and small letters, with **Four Sets of Figures,** Points Ornaments, and **Three** solid pieces,

RETURN IN 10 DAYS TO
FROM
FOR SALE BY

with two Type Holders, 3¼ in. long, pair of Tweezers, a Self-Inking Pad, all complete in a strong wooden box, cloth covered.

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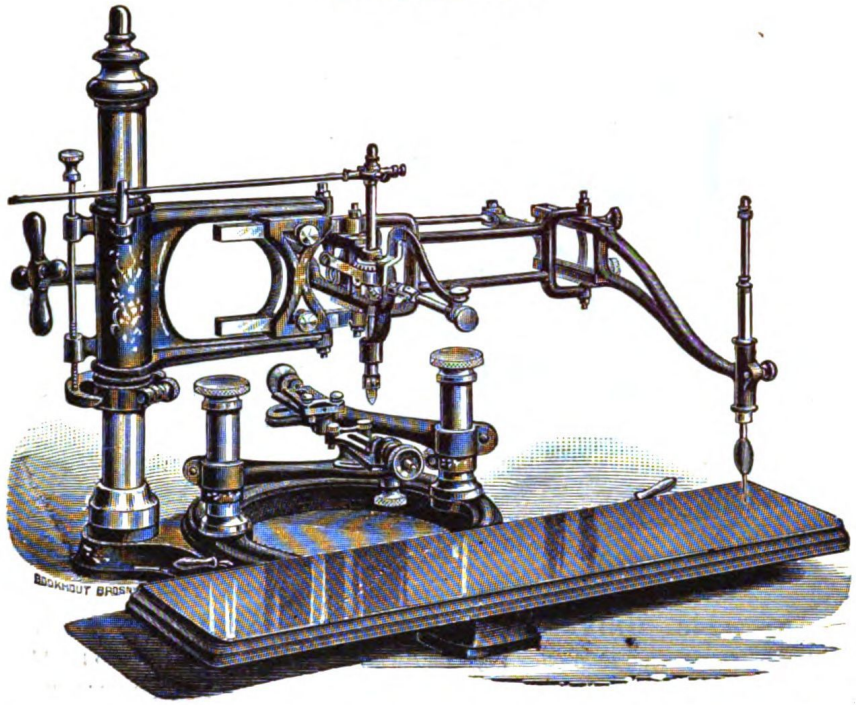
TOOLS E.



THE NEW FRANCIS ENGRAVING MACHINE.

MADE FROM NEW PATTERN, WITH NEW TOOLS.

The Bench Machine, two Common Gravers in No. 3 Holders, and two Wrenches. Price.....$50 00
To the above add attachments, etc., as wanted.

TYPE.

A font of type consists of two letters each of upper and lower case and figures, except No. 10, which is cut in capitals only. Each font is put up in a case containing separate spaces for the letters.

No. 1054.	Plain Script	in case, per font,	$5 00
" 1055.	Round Script	" "	4 50
" 1056.	Common script	" "	3 50
" 1057.	Italic Script (ring type)	" "	3 50
" 1058.	Cross Line Old English	" "	5 50
" 1059.	Scroll Shaded Old English	" "	4 50
" 1060.	Plain Old English	" "	4 00
" 1061.	Plain Old English (ring type)	" "	3 50
" 1062.	Roman Italics	" "	4 00
" 1063.	Gothic (capitals only)	" "	2 50
	Scrolls and Emblems (without case)	" "	2 00

ATTACHMENTS, ETC.

No. 1064.	Type Box for one font	$0 50
" 1065.	Stand, complete	8 50
" 1066.	Graver Plane, for dressing tools	3 00
" 1067.	Diamond Point, for glass	4 00
" 1068.	Ring and Watch Case Attachment	5 00
" 1069.	Improved Coffin-plate Attachment	2 00
" 1070.	Hollow-Ware Attachment	2 00
" 1071.	Ring Tool Holder No. 2	50
" 1072.	Ring Tool Holder No. 4	1 50
" 1073.	Graver Holder No. 1	50
" 1074.	Graver Holder No. 3	1 50
" 1075.	Gravers formed and tempered, but not sharpened ..... each	50
" 1076.	Same dressed ..... "	35
" 1077.	Old Gravers sharpened ..... "	50

The No. 1 and 2 Holders fit any of the old machines, and are as good as any of the others when the point does not have to be centered, but are not adapted to use on plane.

Gravers, except in holders, can not be sharpened with the graver plane.

☞ Will send full illustrated catalogue on application.

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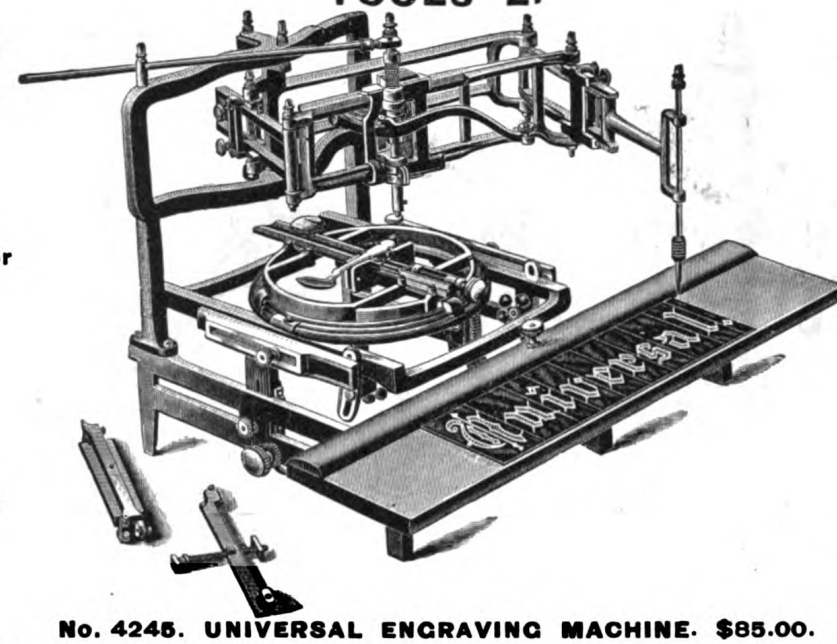
TOOLS E.

SATISFACTION GUARANTEED.

Weight, Boxed for Shipment, 90 Lbs.

Extra Engraving Tools, each 75c.



TYPE WHEN ORDERED SEPARATELY.

No. 4246.
Old English, per set, single, $4 00

No. 4247.
Large Script, per set, single, $3 50

No. 4248.
Small Script, per set, single, $3 50

No. 4245. UNIVERSAL ENGRAVING MACHINE. $85.00.

Complete with Hollow Ware Attachment, Engraving Tools for Rings, Hollow and Flat Ware, also Double Sets of each size of type as shown below.

This Machine is especially designed for the retail jeweler. It will engrave anything from a finger ring to a large sized ice pitcher, cane heads, umbrella handles, coffin plates, watch caps, hollow ware, etc.

For knives, forks, spoons, and such articles as are sold in quantities, nothing could be better, the machine being set for one piece is set for all duplicates. A boy can operate it.

No. 4246.

No. 4247.

No. 4248.

We Claim the Following Superior Advantages over Other Engraving Machines Now in Use.

All the bad traits discarded and the good retained or improved.
A Graver point which is centered once for all.
A Graduated Vise Circle, obviating any difficulty in bringing the work in line.
Superior facilities for holding the work, dispensing with many expensive attachments heretofore necessary.
A greater range of work, producing capitals from 3-32 to 1¼-inch high and small letters in proportion.
An adjustable tilting position for the work on hand, making it possible to engrave correctly on oval or oblique surfaces.
A steady, firm and uniform action of Graver.
Extended accommodations for large work, admitting an ice pitcher or silver-plated tray with ease.
Last but not least: Though better made and finer in appearance, it costs less, "capacity considered," than any engraving machine extant.

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MONARCH ATTACHMENTS.

Monarch attachments consist of one dozen Cement Blocks, Perforated Jaws, Combination Bangle and Button Holder, one set of four Triangular Pins, four sets of four Steel Pins, two sets of four Rubber Covered Steel Pins.

Ring Holder. This attachment is also used for holding a great variety of articles that cannot be held with any other device.

Spoon Bowl Holder. This is a new attachment that is meeting with much praise from engravers who are using it. It is well known that it has been considered impossible to make a device suitable for holding spoons while being engraved in the bowl. This attachment does it to perfection. It will hold all sizes of spoons. It is likewise used for holding a great variety of small gold and silver novelties.

ENGRAVING BLOCKS WITH BALL AND SOCKET ATTACHMENT.

Can be adjusted to any position.

No. 1087. Price, japanned.....$5 00
No. 1087½. Price, nickel-plated.... 6 50

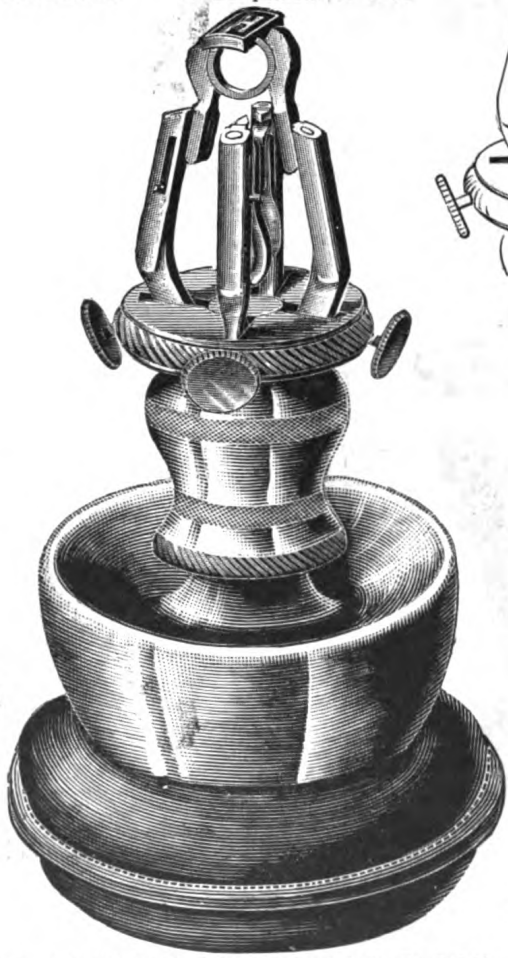
ENGRAVING BLOCK.

No. 1080. Japanned..$3 50
No. 1080½. Nickel-plated..... 4 50

NO. 1081. MONARCH ENGRAVING BLOCK.

Nickel-plated, with attachments complete.

Price..... $15 00



NO. 4301. UNIVERSAL ENGRAVING BLOCK.

Improved Universal Engraving Block, japanned, complete as shown, $6 00. Nickel-plated, $9 00

The above is the most complete and compact Block in the market. No extra stumps, plugs or other detachable attachments. All the many good features of the best blocks are embodied in this tool. It will hold every article that comes in the engraver's line, and can be manipulated with the greatest ease. The four prongs are closed simultaneously by means of the large chuck screw, while the four side screws are used only to clamp articles of irregular shape, such as spoons, etc. As shown in the cuts, the Ring and Thimble holders are pivotally attached to the uprights and are quickly brought to position when required. Can be used as a flat or ball base by reversing the base.

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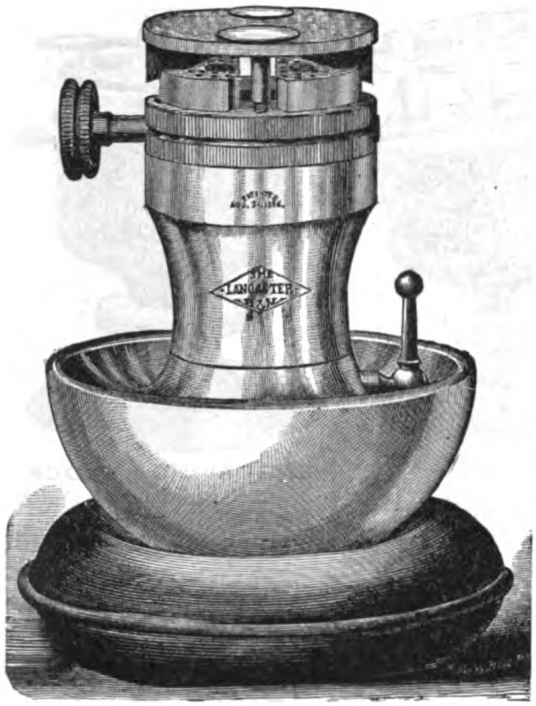
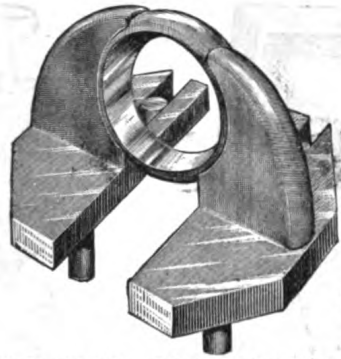


NO. 1084. LANCASTER BALL BASE ENGRAVING BLOCK.

The finest and best engraving block made.

No. 1083. Price for the Flat Base, $13 50
No. 1084. Price for the Ball Base, 15 00

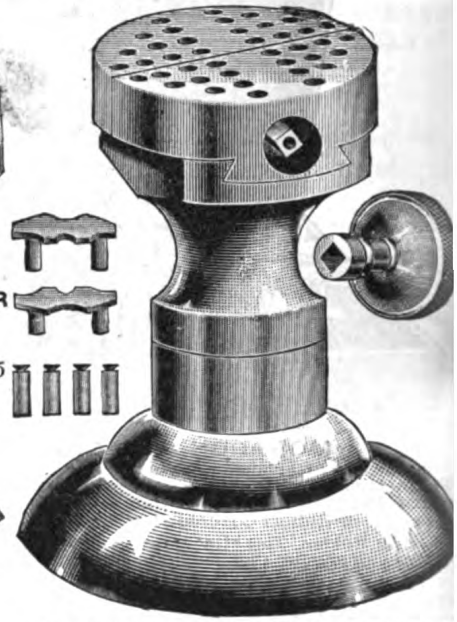


NO. 1085. RING HOLDER FOR LANCASTER ENGRAVING BLOCK.

Nickel-plated.....each, $0 85

NO. 1086. SLEEVE AND COLLAR BUTTON HOLDER FOR LANCASTER BLOCK.

Nickel-plated.....each, $0 85



NO 4302. KING BEE REVOLV ENGRAVING BLOCK.

Price as shown above, nickel-plated.....$

THE KEYSTONE DOUBLE BASE ENGRAVING BLOCK.

No. 1105. The above two illustrations show the Keystone Block used as a flat and ball base, the block is well made and finished in every way, has a large square thread screw; same patent spoon holder as block No. 1097; is guaranteed in every way. Price includes Spoon Holder and 32 Pins and Pegs $10 0

No. 1106. Above Engraving Block and the following extras, Leather Pad, Mahogany Attachment Holder, and attachments listing at $3.90. Price complete $13 8

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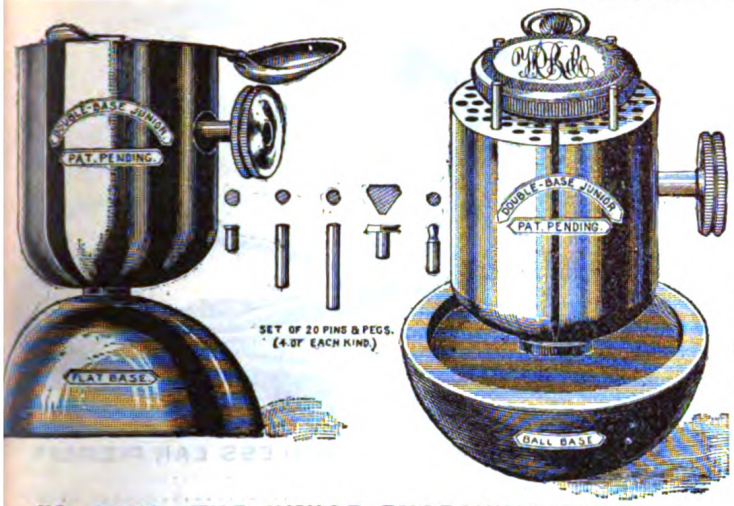
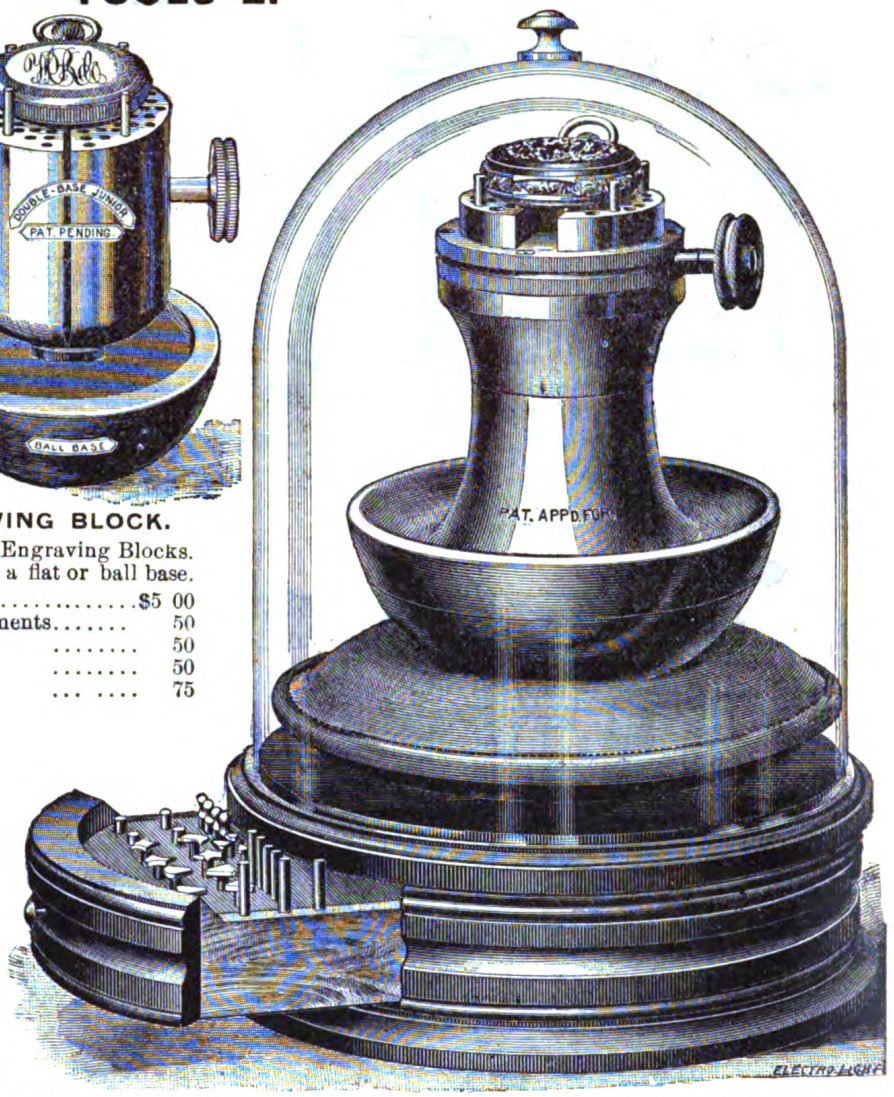
TOOLS E.

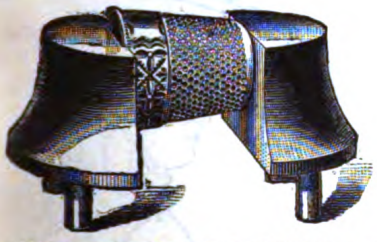


NO. 1104. THE JUNIOR ENGRAVING BLOCK.

This is by far one of the best and cheapest Engraving Blocks. The block as shown above can be used both as a flat or ball base.

Price, Nickel-plated.....$5 00
Price for Extras—Button and Bangle attachments..... 50
Ring Holder " 50
Thimble Holding " 50
Cane and Cap Holding " 75





NO. 1098. THIMBLE ATTACHMENT.

Price.....$0 50

No. 1097. DOUBLE BASE ENGRAVING BLOCK.

With Pad, Spoon Holder, Button and Bangle Attachments, Ring Holder, Cement Plates, A, C, E, and 8 Sets of Pins and Pegs, with Polished Hardwood Base Drawer and Glass Shade.

Price, complete.....$21 50

No. 1101. Double Base Engraving Block as shown above, except Stand and Glass Shade containing Leather Pad, Spoon Holder, Button and Coin attachments, Ring Holder, Cement Plates, A, C, E, and 8 Sets Pins and Pegs.

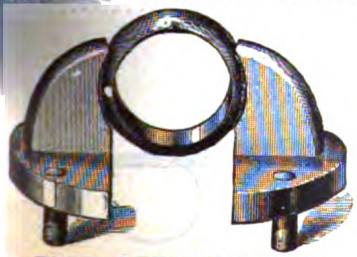
Price.....$18 00

NO. 1099. WATCH, CAP AND CANE HOLDER.

Price.....$0 75

EXTRAS.

No. 1098. Thimble Holder, two pieces $0 50
No. 1099. Cane and Watch Cap Holder, four pieces..... 75
No. 1100. Polished Hardwood Base, with drawer and Glass Shade.... 3 50
Cement Plates. No. A.....$0 25 Cement Plates. No. E..... 50
" " No. C..... 35 " " No. F..... 50



RING ATTACHMENT.

COIN HOLDER.

BUTTON HOLDER.

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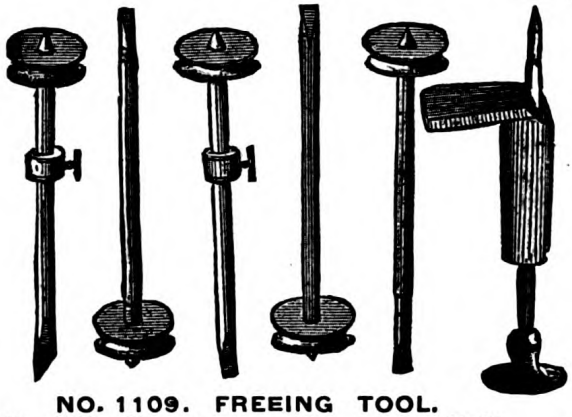
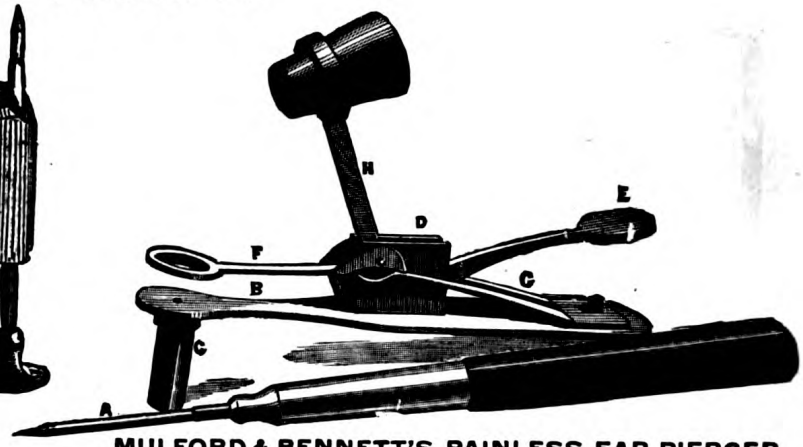
TOOLS E.



NO. 1109. FREEING TOOL.

No. 1109. Price, extra quality..... $1 25
No. 1110. Same, nickel-plated..... 1 50

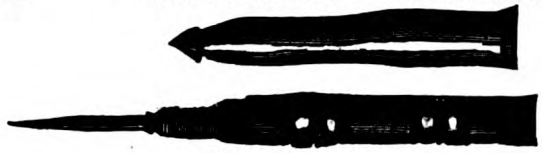


MULFORD & BENNETT'S PAINLESS EAR PIERCER.

No. 1115. Price in Paper Box.....$1 75
No. 1116. " " Morocco Box..... 2 00

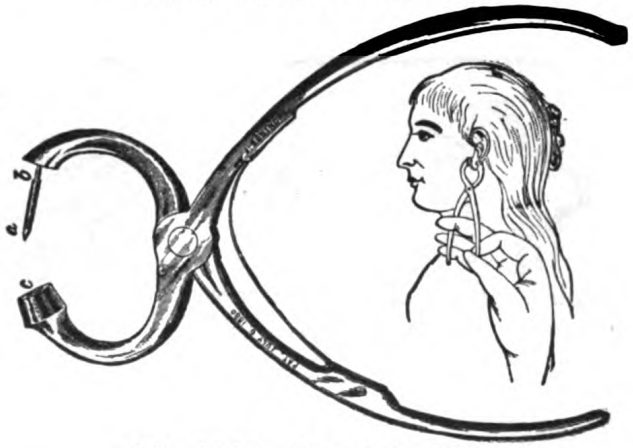
FREEING TOOL.

No. 1112. Price, in case.....per set, $2 50
No. 1113. Nickel-plating, additional, 75



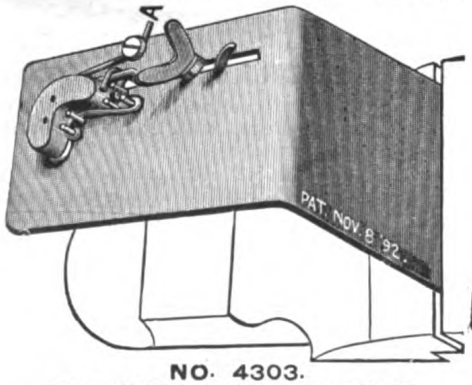
EAR PIERCER.

No. 1114. Price, Bone Handle.....$0 35
Best Quality..... 50



NO. 1111. EAR PIERCER.

Fitted with gold caps, nickel-plated, with spring on inside of handle. Price.....each, $1 25



NO. 4303.
EAR-WIRE FORMING TOOL.

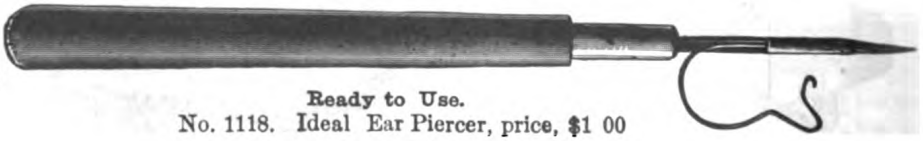
With this tool you can make your own ear-wires, as shown in cut. Full directions with each tool. Price.....each, $1 00

NO. 1119. NEW STYLE EAR PIERCER.

Nickel-plated.....$0 85

NO. 1117. IMPERIAL EAR PIERCER.

Silver Tube and Ebony Handle,
Price.....$0 75



Ready to Use.

No. 1118. Ideal Ear Piercer, price, $1 00

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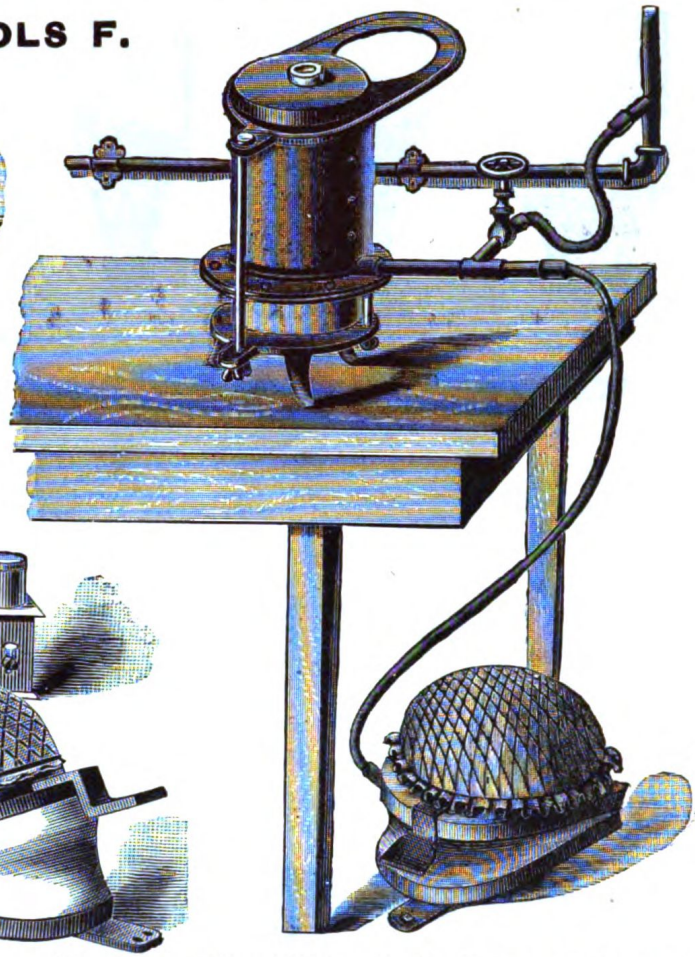
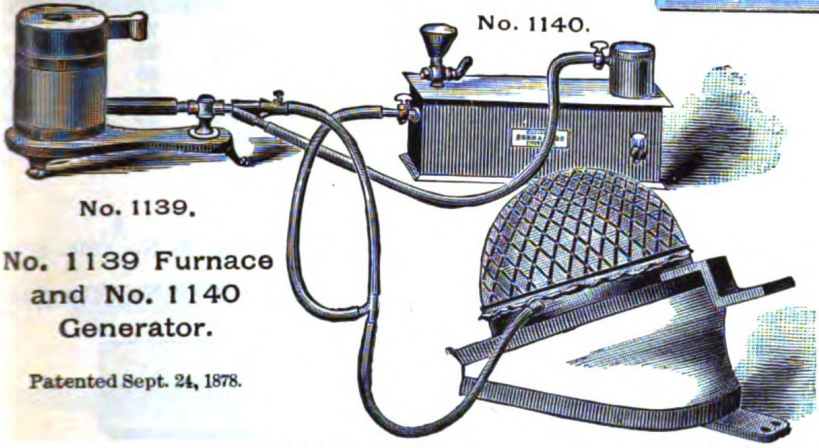
TOOLS F.

No. 1132. CRUCIBLE FURNACE FOR KEROSENE.

No. 1132.	Crucible Furnace for Kerosene	$4 50
" 1133.	Petroleum Burner separately	3 00
	Plumbago Crucibles ... each,	20
" 1134.	Rubber Tubing, per foot	15

For prices of Furnace Parts, see No. 1128.





No. 1139 Furnace and No. 1140 Generator.

Patented Sept. 24, 1878.

Nos. 1139 and 1140.

No. 1139 Furnace, No. 1140 Generator, No. 232 Foot Blower and Tubing complete for use $15 50
Gasoline Generator, No. 1140, alone 6 00

No. 1140 Gasoline Generator is used with No. 1139 Furnace. Capacity of generator, about one quart of Gasoline. Size, 4x4x10 inches. The 74° gasoline, such as is used in vapor stoves, is suitable for use in this generator. Lower grades usually sold as naphtha do not give good results. To those desiring a small furnace for *high temperatures* where gas is not available, this one will be found particularly satisfactory.

No. 1124. The Little Giant Melting Furnace.

This Furnace is capable of melting 400 dwts. of gold, and is warranted to do as follows: 200 dwts. of gold in six minutes, 10 oz. of pure alloying copper in ten minutes. While excellent in factories having no power, for general use it will be found very convenient in connection with power blast for casting gold, laboratory work, etc. Can be used with foot blower or blower. Capacity round crucibles up to 4 inches high.

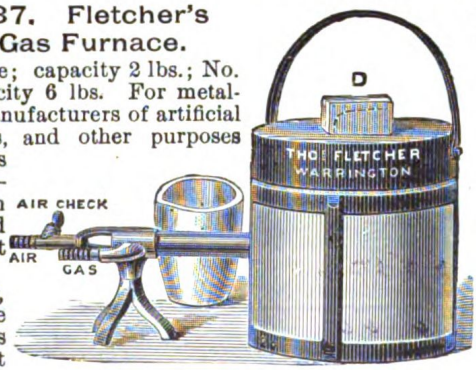
No. 1124. Price for Melter $12 00
Price for Foot Blowers, see Catalogue, page 15.

No. 1124*A*	Price of Extra Cylinder	each,	$1 10
" 1124*B*	" " Covers	"	40
" 1124*C*	" " Bottoms	"	30
" 1124*D*	" " Gas Fittings	...	2 25
" 1124*E*	" " Crucibles,	each,	10
" 1124*F*	" " Supports	..doz.,	60

No. 1136 and No. 1137. Fletcher's Perfected Injector Gas Furnace.

No. 1136 takes No. 1 crucible; capacity 2 lbs.; No. 1137 takes No. 3 crucible, capacity 6 lbs. For metallurgists, jewelers, chemists, manufacturers of artificial gems, iron and brass castings, and other purposes where an ordinary furnace is useless or unreliable. This furnace, founded on the well-known Injector Furnace, is, beyond comparison, the best and simplest gas furnace made.

The burner is in one casting, and there is no tendency for the nozzle to become overheated, as in the former pattern. See that the gauze is pushed up firmly against the shoulder.

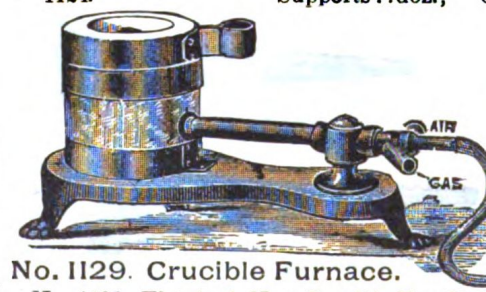


No. 1136. For Gas. Pat. Sept. 24, 1878.

		Price.
No. 1136.	Taking No. 1 Cru., cap'y 2 lbs. cop., without foot blower,	$4 50
" 1137.	" " 3 " " 6 lbs. " " " "	7 00

PRICES FOR SEPARATE PARTS.

No. 1136*A*	Furnace Body	$2 25	No. 1137*B*	Furnace Body, Cover and Dome	$5 00
" 1136*B*	Furnace Body, Cover and Dome	3 00	" 1136*C*	Burner	1 50
" 1137*A*	Furnace Body	4 00	" 1137*C*	Burner	2 00



No. 1129. Crucible Furnace.

No. 1126.	Fletcher's New Crucible Fur.	$3 00
" 1127.	Extra Furnace Body	75
" 1128.	Extra Fur. Body and Cover	1 10
" 1129.	With Imp. Gas Burner	3 50
" 1129½	Extra Burner	1 50
" 1130.	Stand, less Burner	90
" 1131.	Plumbago Crucibles, No. 00,	20

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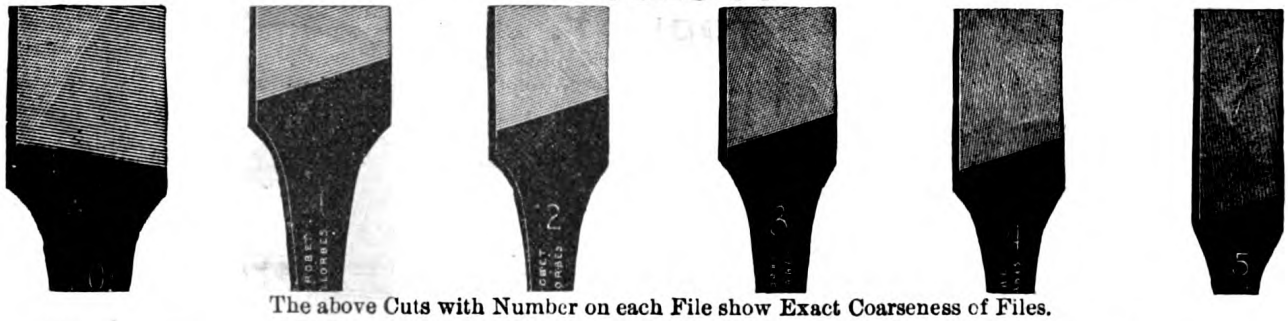
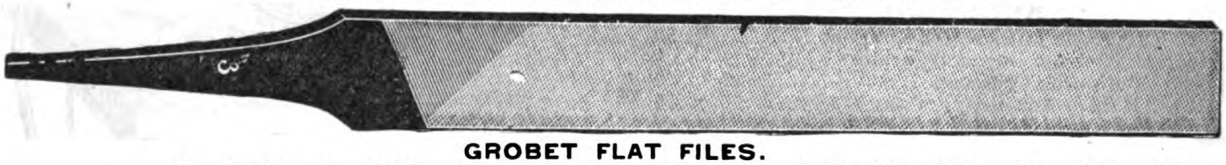
TOOLS F.



The above Cuts with Number on each File show Exact Coarseness of Files.



GROBET FLAT FILES.

	No.	Cut 00.	No.	Cut 0.	No.	Cut 1.	No.	Cut 2.	No.	Cut 3.	No.	Cut 4.	No.	Cut 5.	No.	Cut 6.
3 inches....each,		..	1141.	$0 10	1142.	$0 10	1143.	$0 10	1144.	$0 15	1145.	$0 15	1146.	$0 15	1147.	$0 25
3½ " .... "		..	1148.	12	1149.	12	1150.	12	1151.	15	1152.	15	1153.	20	1154.	25
4 " .... "		..	1155.	15	1156.	15	1157.	15	1158.	20	1159.	20	1160.	20	1161.	30
4½ " .... "		..	1162.	20	1163.	20	1164	20	1165.	20	1166.	20	1167.	25	1168.	30
5 " .... "		..	1169.	20	1170.	20	1171.	20	1172.	25	1173.	25	1174.	25	1175.	30
6 " .... "	1176.	$0 25	1177.	25	1178.	25	1179.	30	1180.	30	1181.	30	1182.	35	1183.	40
8 " .... "		..	1184.	35	1185.	35	1186.	35	1187.	40	1188	50	1189.	60	1190.	70
10 " .... "		..	1191.	70	1192.	70	1193.	75	1194.	80	1195.	85	1196.	90	1197.	90

STUBS' FLAT FILES.

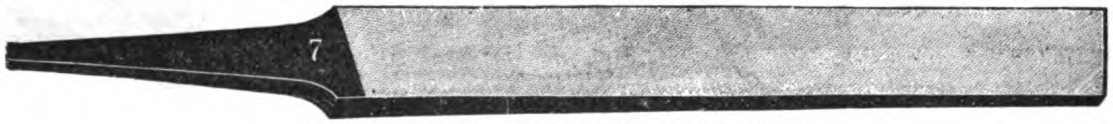
BASTARD.

Inches..	3	3½	4	4½	5	6	8
Each....	No. 1258. $0 15	No. 1259. $0 15	No. 1260. $0 20	No. 1261. $0 25	No. 1262. $0 30	No. 1263. $0 35	No. 1264. $0 50

SMOOTH.

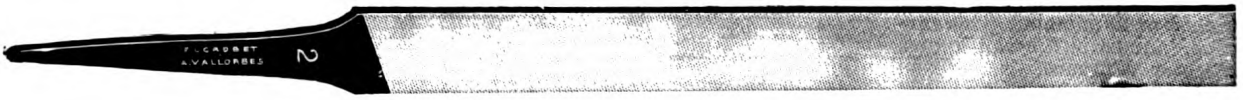
Each....	No. 1265. $0 20	No. 1266. $0 20	No. 1267. $0 25	No. 1268. $0 30	No. 1269. $0 35	No. 1270. $0 40	No. 1271. $0 55

No. 1271½. Planing Files, one side coarse, other fine, no handles, 9 inches long by 1⅝ inches wide.....each, 1 00



GROBET FLAT HALF BURNISH FILES.

	No.	Cut 1.	No.	Cut 2.	No.	Cut 3.	No.	Cut 4.	No.	Cut 5.	No.	Cut 6.
4 inches.....each,	1198.	$0 20	1199.	$0 20	1200.	$0 20	1201.	$0 25	1202.	$0 25	1203.	$0 25
4½ " ..... "	1204.	20	1205.	20	1206.	20	1207.	25	1208.	30	1209.	30
5 " ..... "	1210.	25	1211.	25	1212.	25	1213.	30	1214.	30	1215.	35



GROBET WIDE PILLAR FILES.

	No.	Cut 0.	No.	Cut 1.	No.	Cut 2.	No.	Cut 3.	No.	Cut 4.	No.	Cut 5.	No.	Cut 6
3 inches.....each,	1216.	$0 15	1217.	$0 15	1218.	$0 15	1219.	$0 15	1220.	$0 15	1221.	$0 15	1222.	$0 15
3½ " ..... "	1223.	15	1224.	15	1225.	15	1226.	20	1227.	20	1228.	20	1229.	25
4 " ..... "	1230.	15	1231.	20	1232.	20	1233.	20	1234.	25	1235.	25	1236.	25
4½ " ..... "	1237.	20	1238.	25	1239.	25	1240.	25	1241.	25	1242.	30	1243.	30
5 " ..... "	1244.	20	1245.	25	1246.	25	1247.	30	1248.	30	1249.	35	1250.	35
6 " ..... "	1251.	25	1252.	25	1253.	30	1254	30	1255.	35	1256	40	1257.	40

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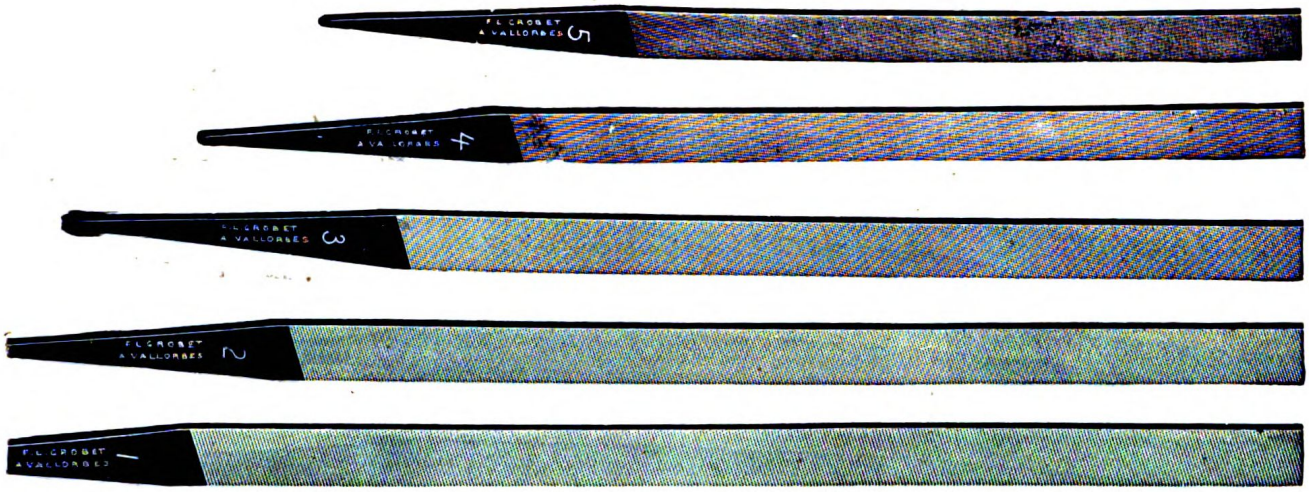
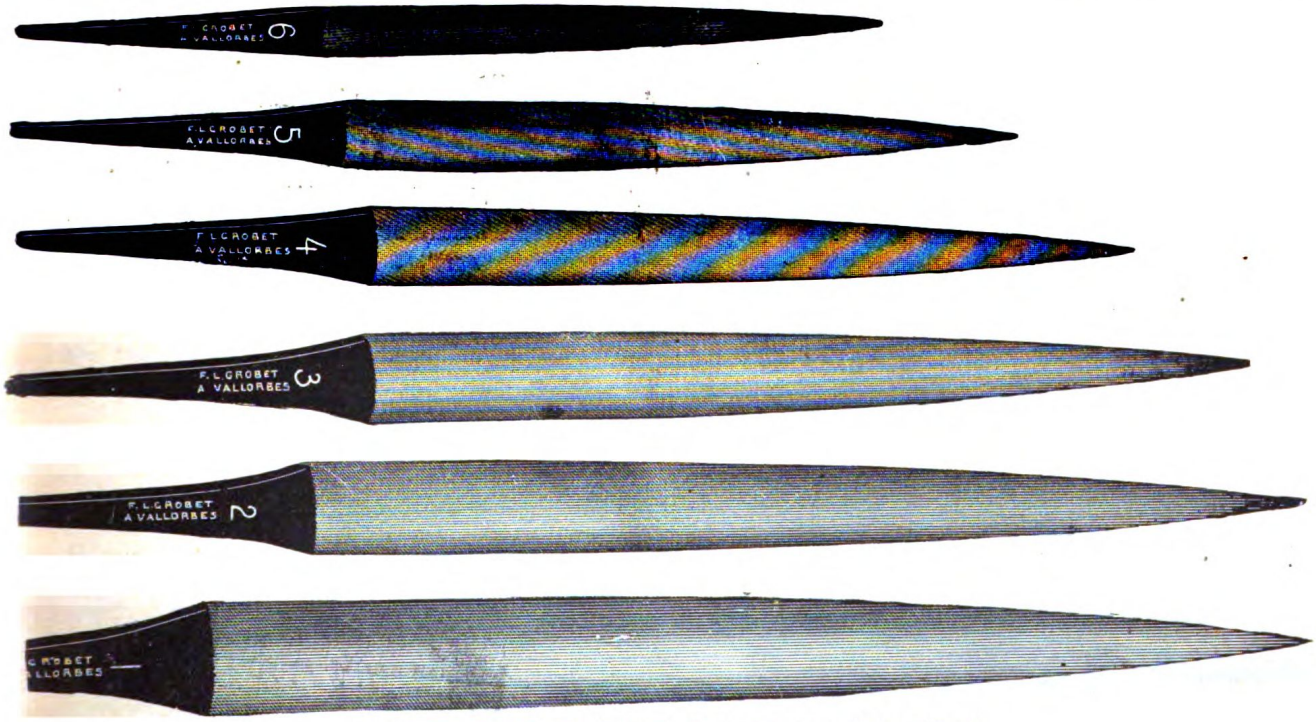
TOOLS F.



GROBET NARROW PILLAR FILES.

Number on File designates the Cut.

		No.	Cut 1.	No.	Cut 2.	No.	Cut 3.	No.	Cut 4.	No.	Cut 5.	No.	Cut 6.
3 inches	each,	1272.	$0 15	1273.	$0 15	1274.	$0 15	1275.	$0 15	1276.	$0 15	1277.	$0 15
3½ "	"	1278.	15	1279.	15	1280.	20	1281.	20	1282.	20	1283.	25
4 "	"	1284.	20	.....	20	.....	20	.....	20	.....	20	1285.	25
4½ "	"	1286.	20	1287.	25	.....	25	1288.	30	.....	30	.....	30
5 "	"	1289.	25	1290.	30	.....	30	.....	30	1291.	35	.....	35
6 "	"	1292.	25	1293.	30	1294.	35	1295.	40	1296.	40	1297.	40



GROBET BIRD TONGUE OR CROSSING FILES.

Number on File designates the cut.

				Each.						Each.						
No.	1298.	2½ in.	Grobet, all cuts	$0 15	No.	1305.	2½ in.	Stubs' smooth	$0 25	No.	1312.	2½ in	Stubs' bastard	$0 20
"	1299.	3 "	" "	15	"	1306.	3 "	"	25	"	1313.	3 "	"	20
"	1300.	3½ "	" "	15	"	1307.	3½ "	"	30	"	1314.	3½ "	"	25
"	1301.	4 "	" "	20	"	1308.	4 "	"	35	"	1315.	4 "	"	30
"	1302.	4½ "	" "	25	"	1309.	4½ "	"	40	"	1316.	4½ "	"	35
"	1303.	5 "	" "	30	"	1310.	5 "	"	45	"	1317.	5 "	"	40
"	1304.	6 "	" "	35	"	1311.	6 "	"	50	"	1318.	6 "	"	45

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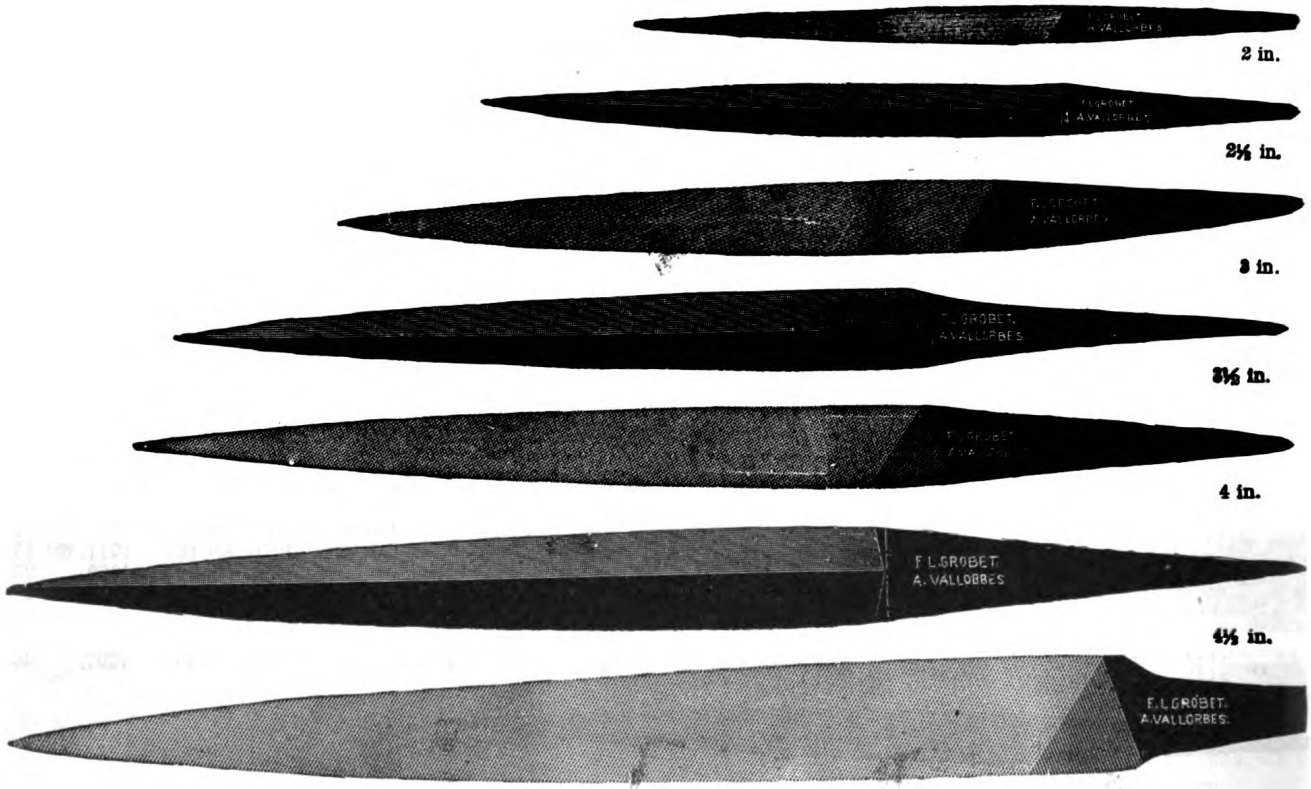
TOOLS F.



2 in.

2½ in.

3 in.

3½ in.

4 in.

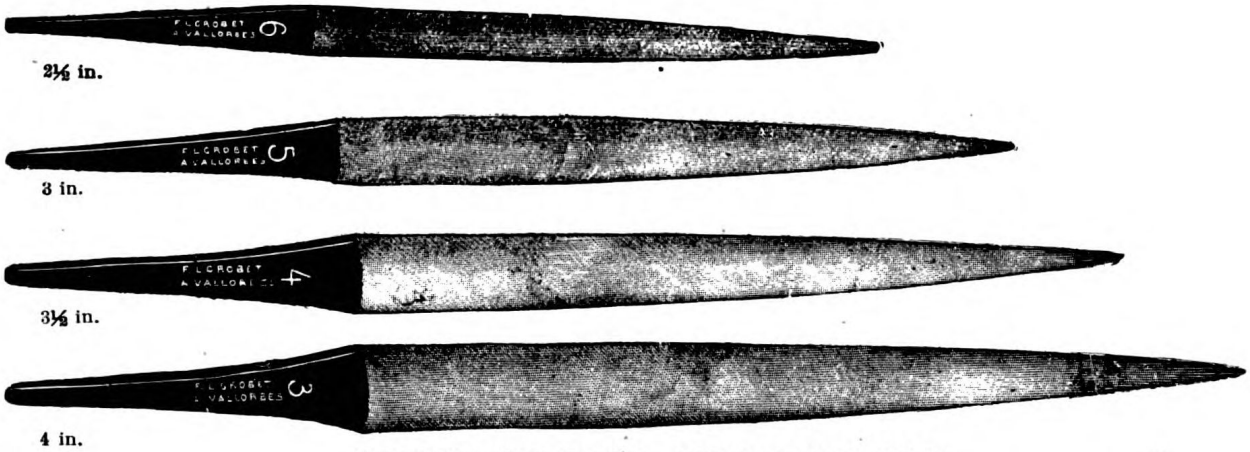
4½ in.

5 in.

GROBET-BARRET FILES.

Above Cuts show both sides of Files.

No. 1318.	½ 2 inches, Cuts 0 to 6	each,	$0 15	No. 1322.	4 inches, Cuts 0 to 6	each,	$0 20
" 1319.	2½ " "	"	15	" 1323.	4½ " "	"	25
" 1320.	3 " "	"	15	" 1324.	5 " "	"	30
" 1321.	3½ " "	"	15				



2½ in.

3 in.

3½ in.

4 in.

GROBET AND STUBS HALF ROUND FILES.

Above Four Cuts show only part of Cuts on Files.

			Each.				Each.				Each.
No. 1325.	2½ in.	Grobet, cuts 0 to 6	$0 15	No. 1332.	2½ in.	Stubs' bastard	$0 20	No. 1339.	2½ in.	Stubs' smooth	$0 25
" 1326.	3 "	" "	15	" 1333.	3 "	"	20	" 1340.	3 "	"	25
" 1327.	3½ "	" "	20	" 1334.	3½ "	"	20	" 1341.	3½ "	"	25
" 1328.	4 "	" "	25	" 1335.	4 "	"	20	" 1342.	4 "	"	25
" 1329.	4½ "	" "	25	" 1336.	4½ "	"	25	" 1343.	4½ "	"	30
" 1330.	5 "	" "	30	" 1337.	5 "	"	30	" 1344.	5 "	"	35
" 1331.	6 "	" "	35	" 1338.	6 "	"	35	" 1345.	6 "	"	40

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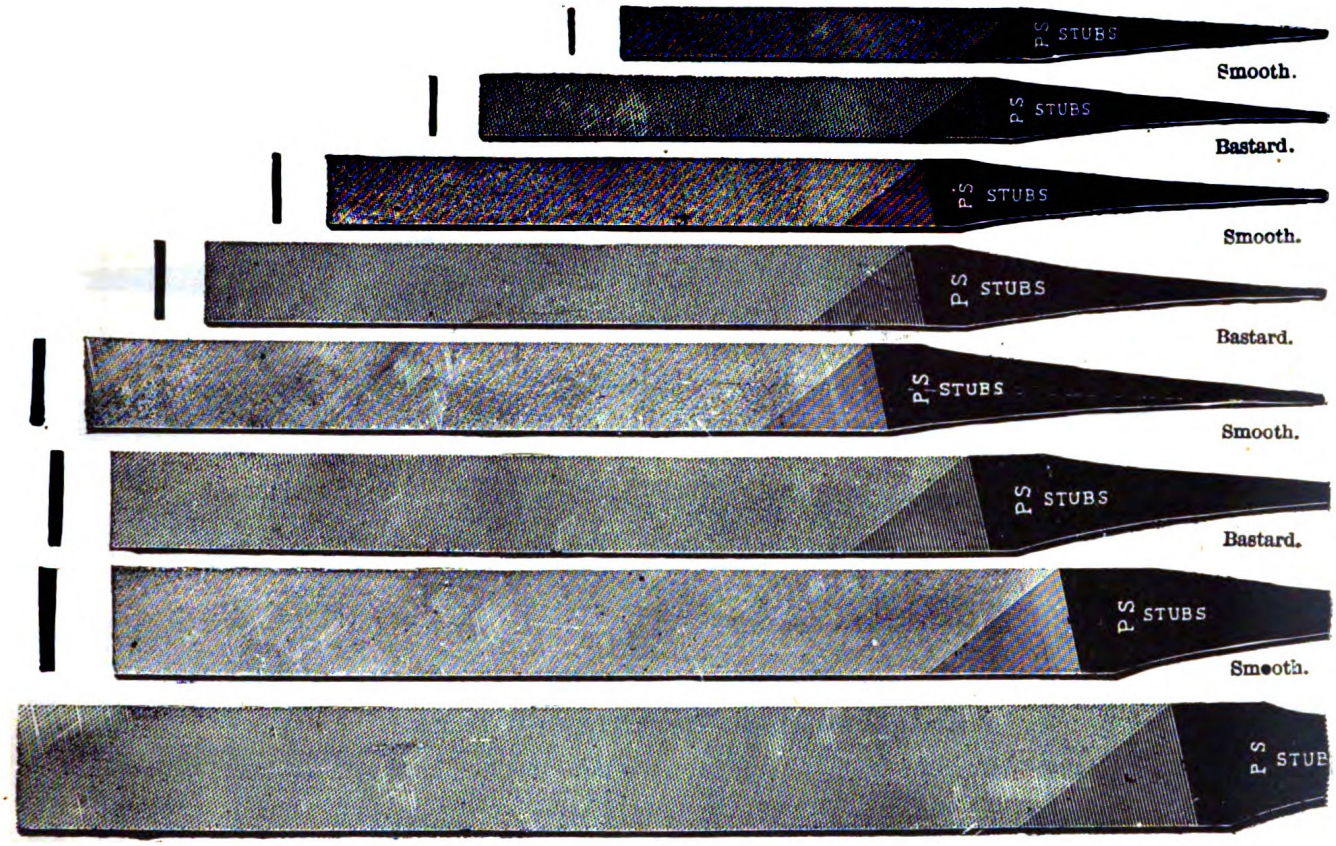
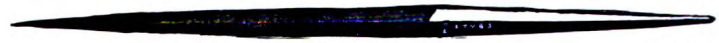
TOOLS F.



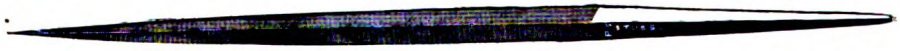
STUBS' EQUALING FILES.

	No. 2-in.	No. 2½-in.	No. 3-in.	No. 3½-in.	No. 4-in.	No. 4½-in.	No. 5-in.	No. 6-in.
Bastard..each,	1349, $0 15	1350, $0 15	1351, $0 15	1352, $0 20	1353, $0 25	1354, $0 30	1355, $0 35	1356, $0 40
Smooth.. "	1357, 15	1358, 15	1359, 15	1360, 20	1361, 25	1362, 30	1363, 35	1364, 40



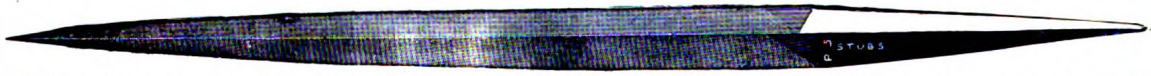
No. 1365. 2-inch Stubs' Three Cornered Files, Bastard.....each, $0 15 No. 1366. Smooth.....each, $0 20

No. 1367. 2½-inch Stubs' Three Cornered Files, Bastard.....each, $0 15 No. 1368. Smooth.....each, $0 20



No. 1369. 3-inch Stubs' Three Cornered Files, Bastard.....each, $0 15 No. 1370. Smooth.....each, $0 20

No. 1371. 3½-inch Stubs' Three Cornered Files, Bastard.....each, $0 20 No. 1372. Smooth.....each, $0 25



No. 1373. 4-inch Stubs' Three Cornered Files, Bastard.....each, $0 25 No. 1374. Smooth.....each, $0 25

No. 1375. 4½-inch Stubs' Three Cornered Files, Bastard.....each, $0 30 No. 1376. Smooth.....each, $0 30

No. 1377. 5-inch Stubs' Three Cornered Files, Bastard.....each, $0 35 No. 1378. Smooth..... each, $0 35
No. 1379. 6-inch Stubs' Three Cornered Files, Bastard.....each, 45 No. 1380. Smooth.....each, 45

STUBS' THREE CORNERED FILES.

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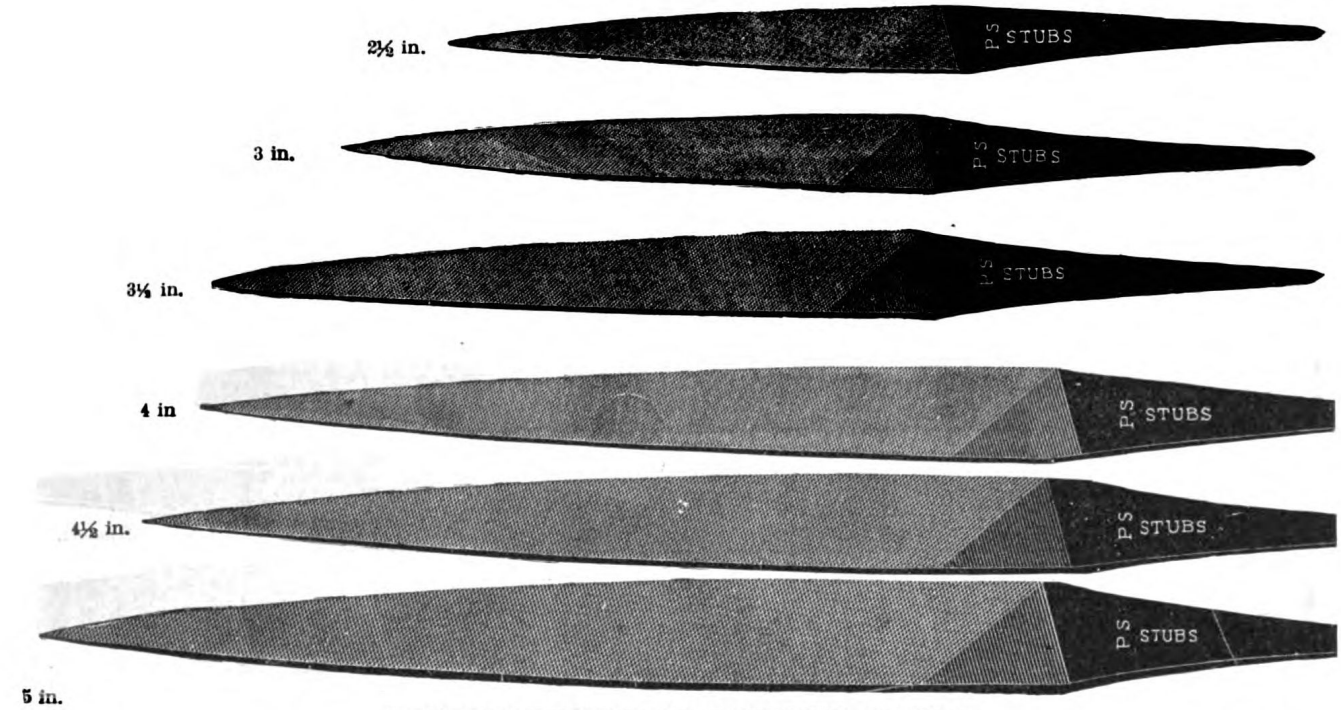
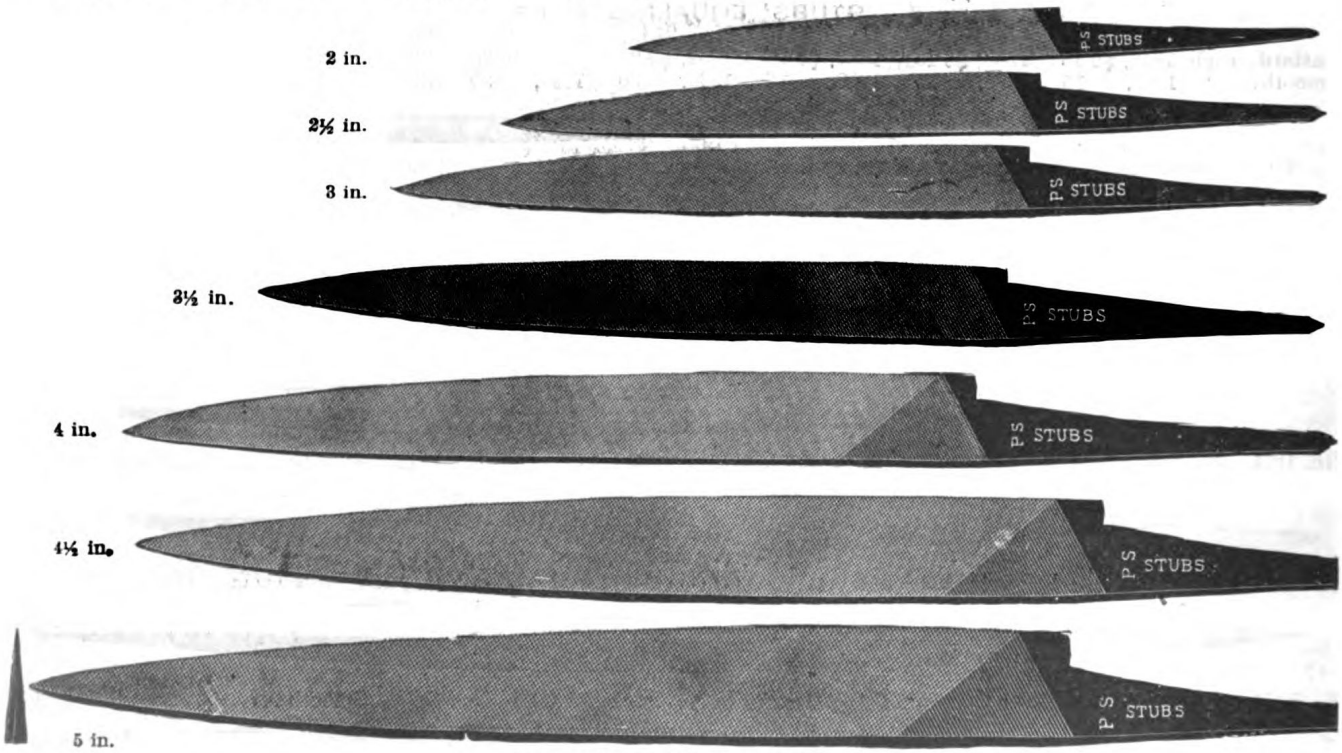
TOOLS F.



STUBS' WARDING OR ENTERING FILES.

	BASTARD.	EACH.		SMOOTH.	EACH.		BASTARD.	EACH.		SMOOTH.	EACH.
No. 1381.	2½ inch	$0 15	No. 1385.	2½ inch	$0 15	No. 1389.	4½ inch	$0 25	No. 1392.	4½ inch	$0 30
" 1382.	3 "	15	" 1386.	3 "	20	" 1390.	5 "	30	" 1393.	5 "	35
" 1383.	3½ "	20	" 1387.	3½ "	20	" 1391.	6 "	35	" 1394.	6 "	40
" 1384.	4 "	20	" 1388.	4 "	25						



STUBS' KNIFE FILES.

	BASTARD.	EACH.		SMOOTH.	EACH.		BASTARD.	EACH.		SMOOTH.	EACH.
No. 1395.	2 inch	$0 15	No. 1399.	2 inch	$0 20	No. 1403.	4 inch	$0 20	No. 1407.	4 inch	$0 25
" 1396.	2½ "	15	" 1400.	2½ "	20	" 1404.	4½ "	25	" 1408.	4½ "	30
" 1397.	3 "	15	" 1401.	3 "	20	" 1405.	5 "	30	" 1409.	5 "	35
" 1398.	3½ "	15	" 1402.	3½ "	20	" 1406.	6 "	40	" 1410.	6 "	45

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TOOLS F.

GROBET'S ROUND AND SQUARE FILES.

				Each.	Doz.
No. 1411.	2	inch,	cut 0 to 6	$0 10	$1 00
" 1412.	2½	"	"	10	1 00
" 1413.	3	"	"	10	1 15
" 1414.	3½	"	"	12	1 20
" 1415.	4	"	"	15	1 20
" 1416.	4½	"	"	20	2 10
" 1417.	5	"	"	25	2 30
" 1418.	6	"	"	25	2 70

STUBS' ROUND AND SQUARE FILES.

				Each.
No. 1419.	2	inch	Bastard	$0 15
" 1420.	2½	"	"	15
" 1421.	3	"	"	15
" 1422.	3½	"	"	15
" 1423.	4	"	"	20
" 1424.	4½	"	"	20
" 1425.	5	"	"	25
" 1426.	2	"	Smooth	18
" 1427.	2½	"	"	18
" 1428.	3	"	"	18
" 1429.	3½	"	"	18
" 1430.	4	"	"	25
" 1431.	4½	"	"	25
" 1432.	5	"	"	30

Please State if Round or Square Files are wanted.

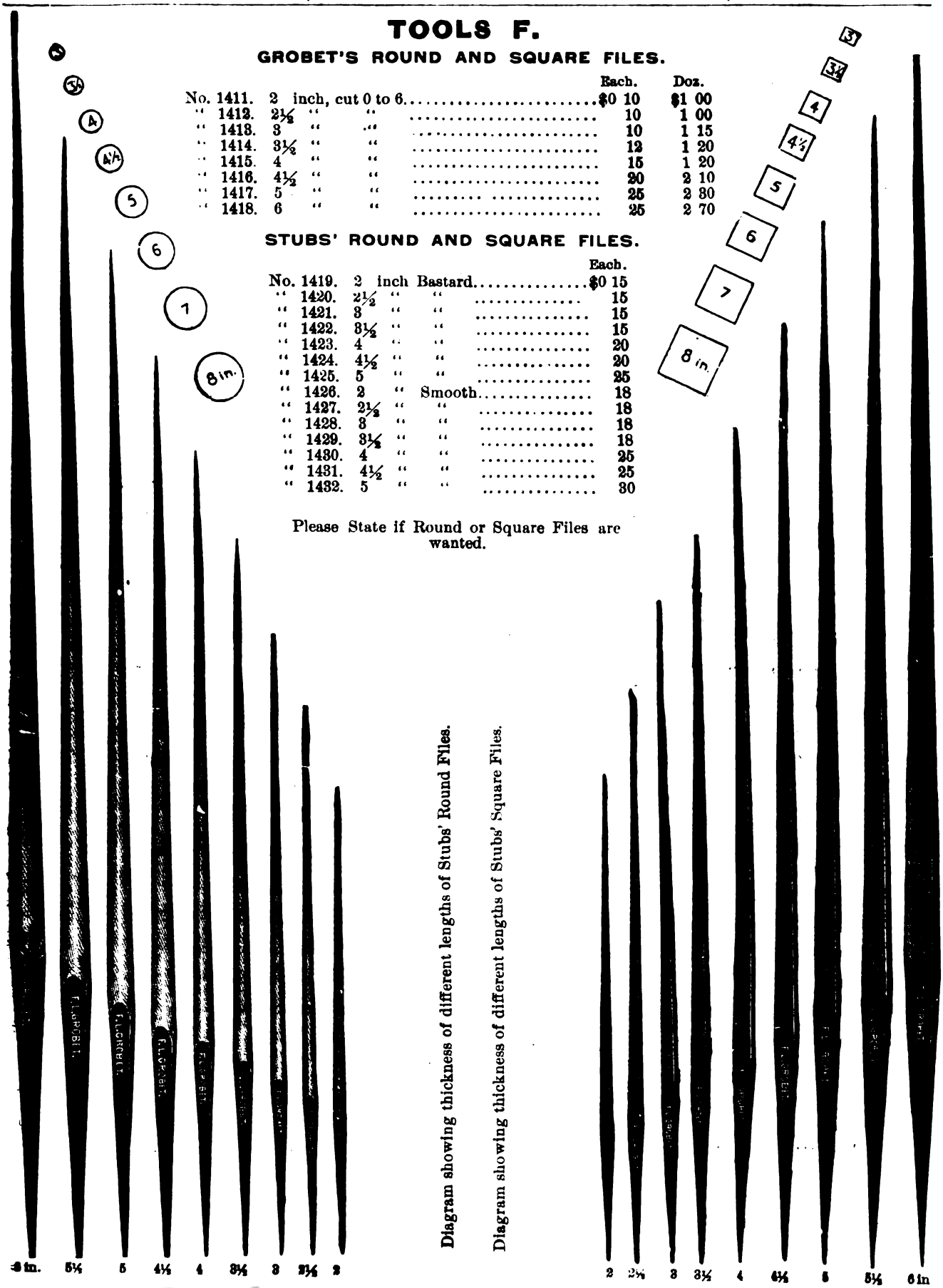

Diagram showing thickness of different lengths of Stubs' Round Files.

Diagram showing thickness of different lengths of Stubs' Square Files.

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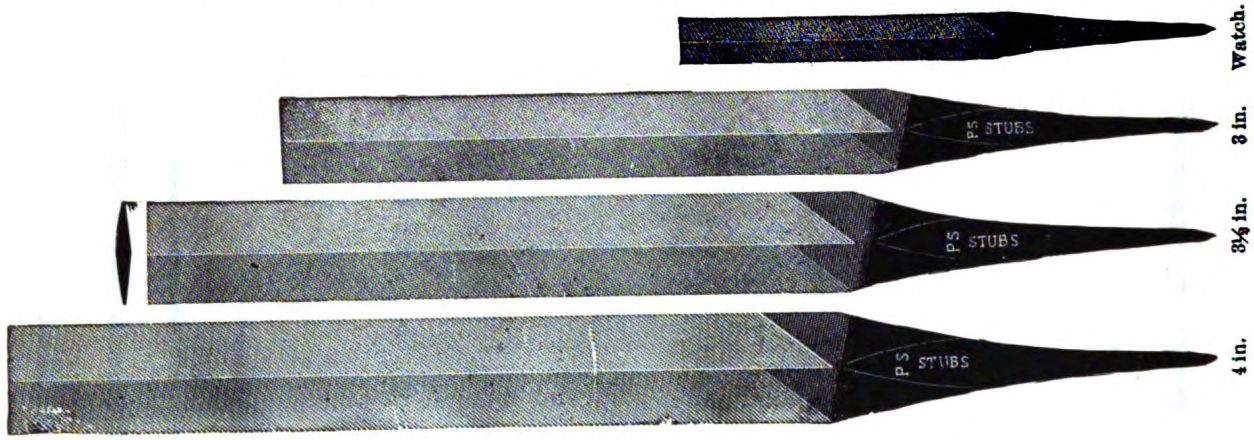
TOOLS F.

STUBS' JOINT FILES.

No. 1433.	3 inch	each,	$0 20	No. 1436.	4½ inch	each,	$0 30
" 1434.	3½ "	"	20	" 1437.	5 "	"	35
" 1435.	4 "	"	25	" 1438.	6 "	"	40



Watch.
3 in.
3½ in.
4 in.

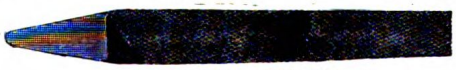
STUBS' SCREW HEAD OR SLITTING FILES.

No. 1439.	2 inch Bastard	each,	$0 15	No. 1443.	Smooth	each,	$0 20
" 1440.	3 " "	"	15	" 1444.	"	"	20
" 1441.	3½ " "	"	20	" 1445.	"	"	25
" 1442.	4 " "	"	30	" 1446.	"	"	35

No. 1447
" 1448
" 1449
" 1450
" 1451
" 1452
" 1453
" 1454
" 1455
" 1456
" 1457
" 1458

ESCAPEMENT FILES.

Grobet, in sets of 12 as shown above.....each, $0 12.....per set, $1 20



NO. 1459. FILES.

Equaling, Short.....each, $0 12
Per dozen..... 1 25

NO. 1460. FILES.

Ratchet, Short.....each, $0 15 Per doz.....$1 50
No. 1461. " extra wide.. " 20 " 2 00

NO. 1462.

Small, Round Files for opening Dials..per doz., $0 90

NO. 1463. FILES.

Ruby, Ebony Handle.....each, $0 25

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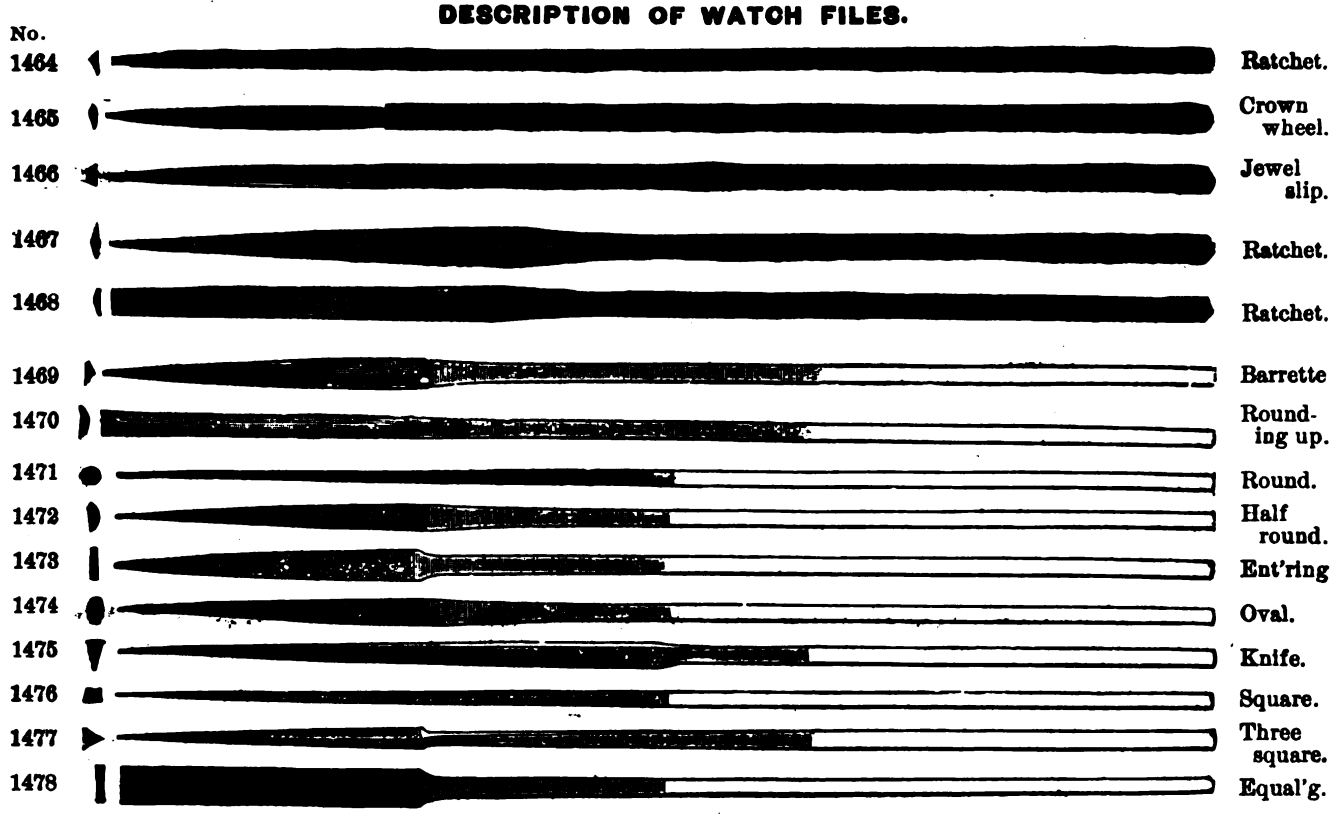
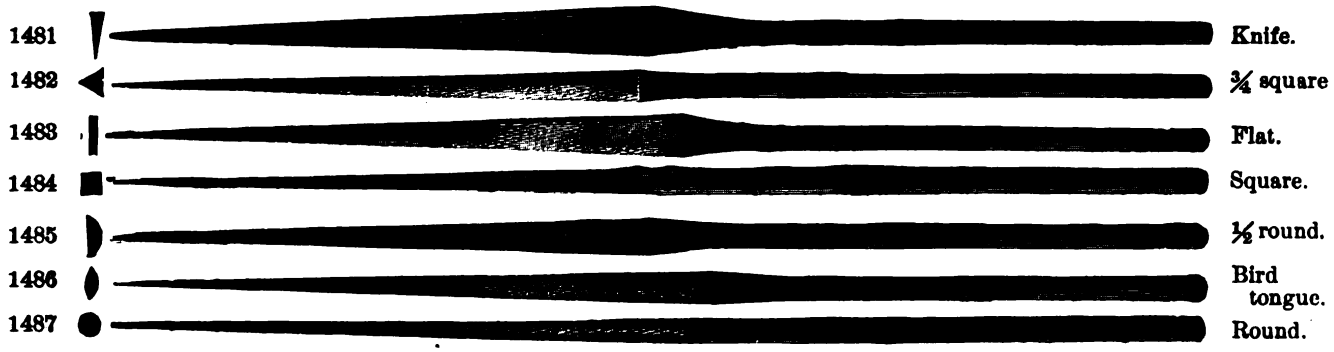
TOOLS F.

DESCRIPTION OF WATCH FILES.



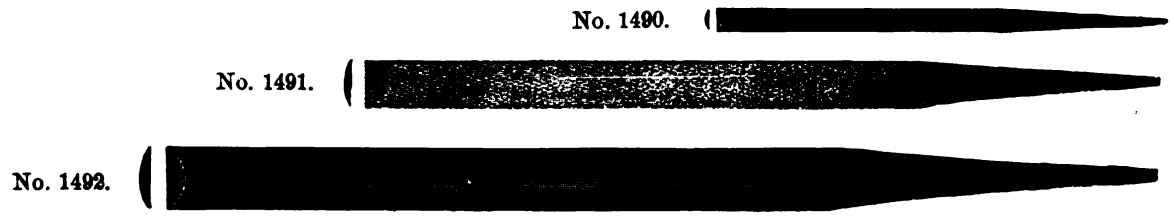
WATCH FILES.

No. 1464 to 1478 ..... each, $0 12 Per dozen, $1 25
" 1480. Equaling files also come in sets of 12 different thicknesses..... per set, 1 25



JEWELERS' NEEDLE FILES.

No. 1488. 2-inch length, Vautier's make..... each, $0 10 Per dozen, $0 70
" 1489. 2¾ " " " ..... " 10 " 90



ROUNDING UP FILES.

No. 1490. Watch, assorted in sets of 12..... each, $0 12 Per dozen, $1 25
" 1491. Clock, " ..... " 20 " 2 25
" 1492. " " ..... " 25 " 2 75

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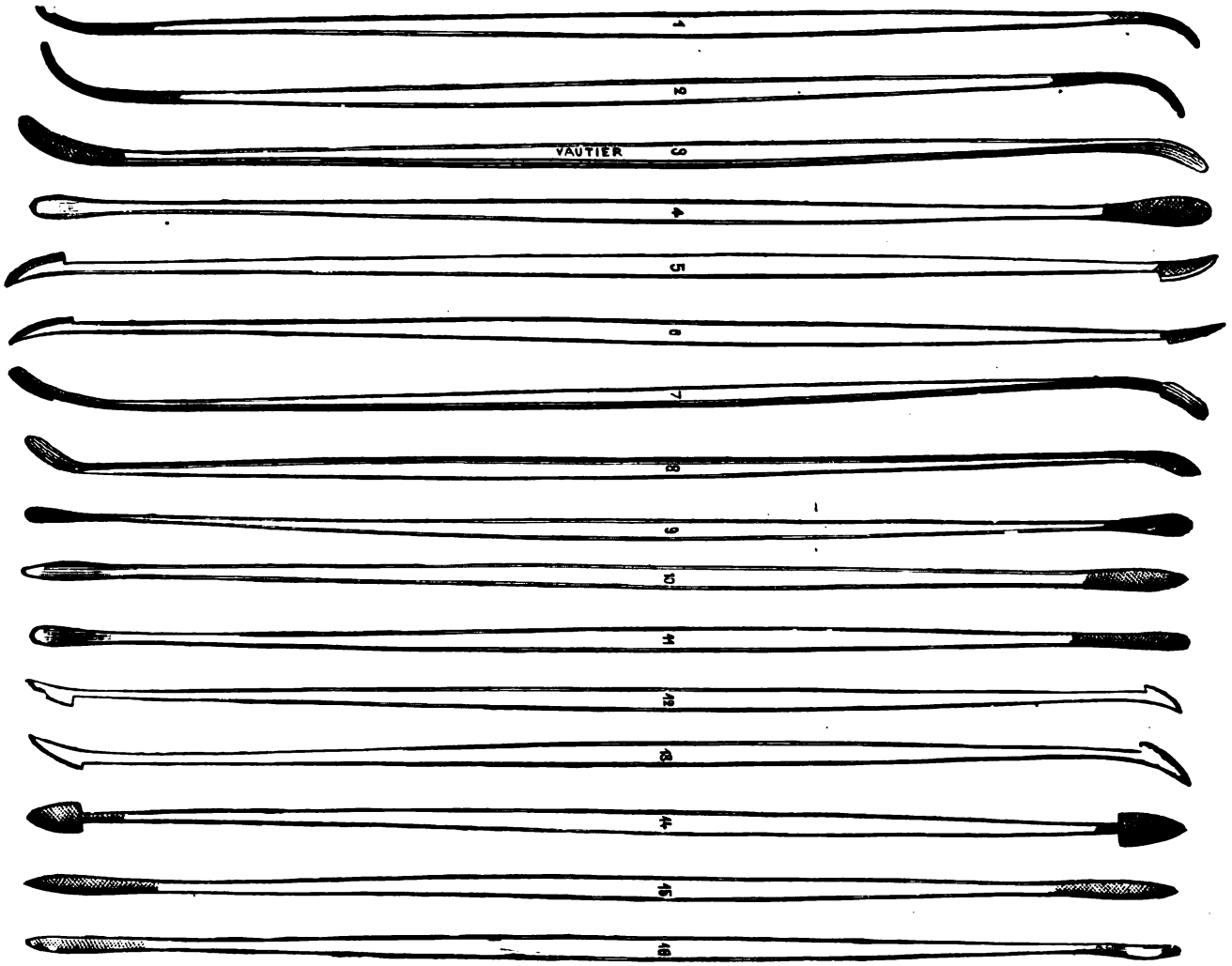
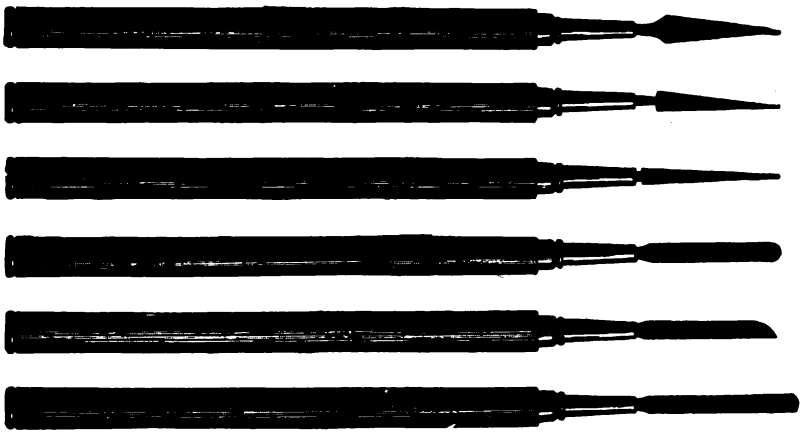
TOOLS F.



NO. 1493. VAUTIER RIFFLE FILES.

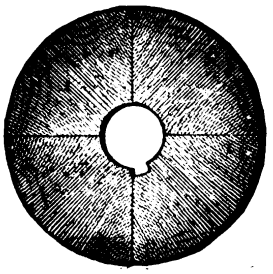
Price, each.....$0 25; per doz., $2 50



NO. 1494. DIAMOND SLIP FILES.

These files are charged with diamond dust, in six assorted shapes as shown above.

Price per set of six.....$2 00



Full size.

NO. 1495. ROTARY STEEL FILE.

Made from No. 14 Steel. Beveled to No. 20 at Edge.

Each.....$0 30

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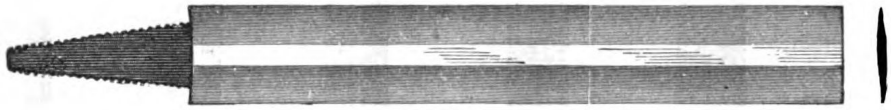
TOOLS F.

NO. 1496. RATCHET FILE.

Price.....each, $0 15

NO. 1497. SCREW HEAD FILE.

Price, best.....each, $0 12; per dozen, $1 50



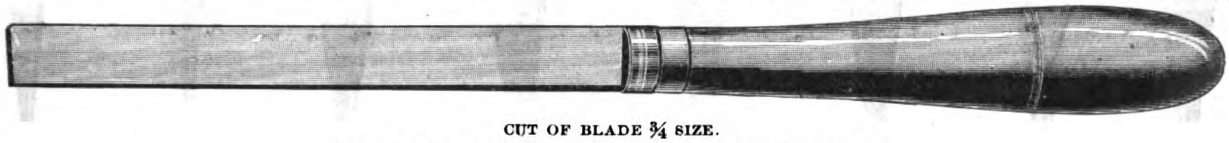
NO. 1498. SCREW HEAD FILE.

With Handle Grobet.....each, $0 15

CUT FULL SIZE.

NO. 1499. ENGLISH PIVOT BURNISHERS.

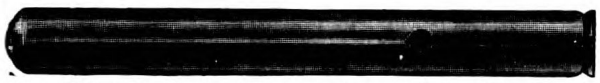
With Ebony Handles.....each, $0 35



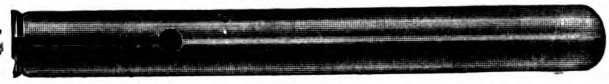
CUT OF BLADE ¾ SIZE.

NO. 1500. ENGLISH BURNISHER FILES.

With Ebony Handles.....each, $0 50



CUT FULL SIZE



Two files in one. One side is a pivot file, and the other a square burnisher, with covers for each side when not in use.

NO. 1501. NEW STYLE PIVOT FILE AND BURNISHER.

Complete.....$0 40

No. 1502. Right Pivot File, with Handle.....each, $0 20
" 1503. " " " Conical, with Handle..... " 25

No. 1504. Left Pivot File, with Handle.....each, $0 20
" 1505. " " " Conical, with Handle..... " 25

PIVOT FILE.

No. 1506 Right Pivot Burnisher with Handle.....each, $0 20
" 1507. " " " Conical, with Handle..... " 25

No. 1508. Left Pivot Burnisher with Handle.....each, $0 20
" 1509. " " " Conical, with Handle..... " 25

PIVOT BURNISHER

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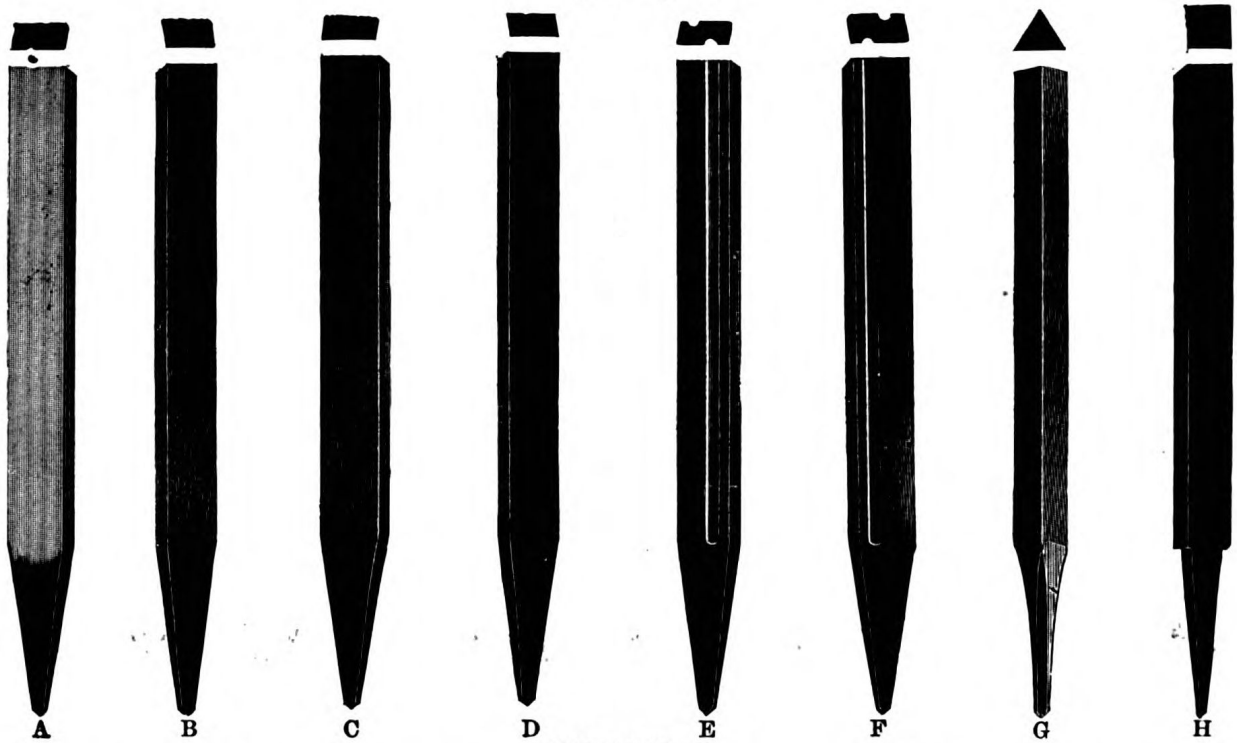
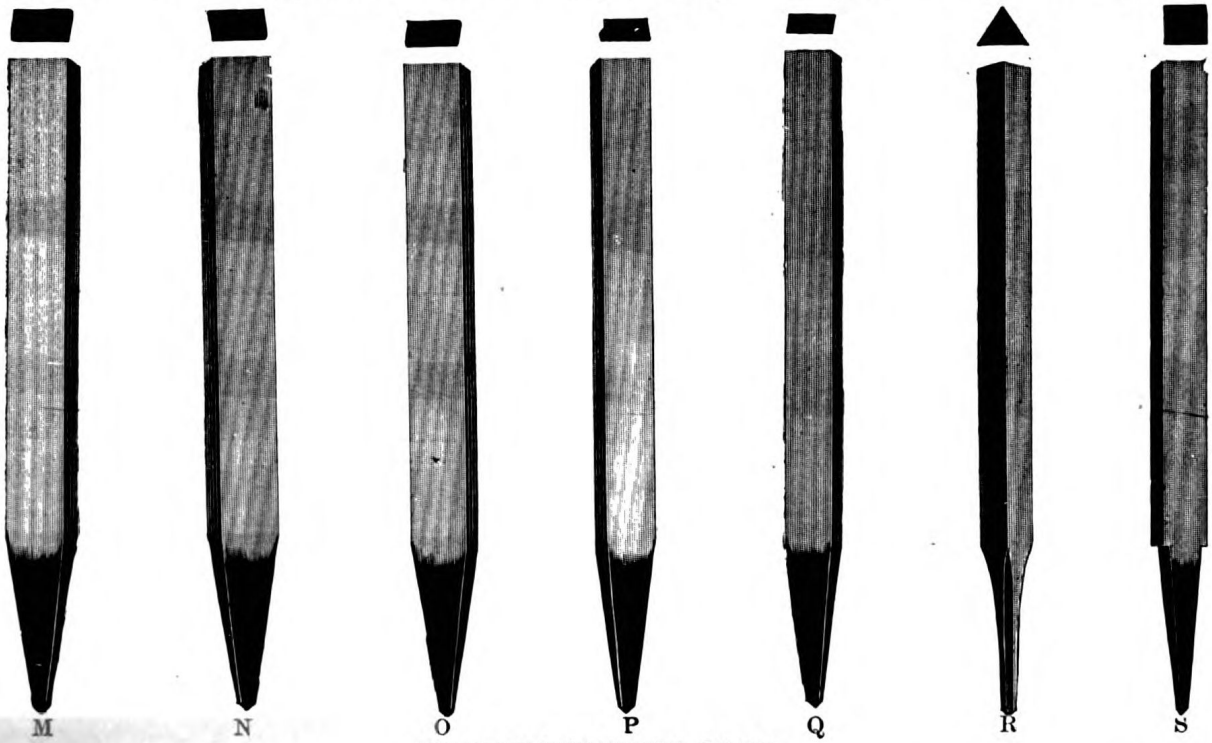
TOOLS F.



PIVOT FILES.

No. 1510.	Pivot, Sharp Edge,	A, Right-hand....	each,	$0	20
" 1511.	" " "	B, Left-hand.....	"		20
" 1512.	" Conical "	C, Right-hand ...	"		20
" 1513.	" " "	D, Left-hand.....	"		20
No. 1514.	Pivot, Grooved Edge,	E, Right-hand..	each,	$0	25
" 1515.	" " "	F, " ..	"		25
" 1516.	" ¾ Square "	G, " ..	"		20
" 1517.	" Square "	H, " ..	"		20



PIVOT BURNISHING FILES.

No. 1518.	Pivot, Sharp Edge,	M, Right-hand ...	each,	$0	20
" 1519.	" " "	N, Left-hand.....	"		20
" 1520.	" Conical "	O, Right-hand ...	"		20
" 1521.	" " "	P, Left-hand	"		20
" 1522	" E, Gr'v'd "	Right-hand (see top cut)			25
" 1523.	" F " "	Left-hand "			25
No. 1524.	Pivot, with File Edge.....		each,	$0	35
" 1525.	" for Freeing the Pivots,	Q	"		30
" 1526.	" ¾ square	R	"		20
" 1527.	" Square	S	"		20
" 1528.	" (see top cut)	E, Grooved Con. Edge,	Right,		25
" 1529.	" " "	F, " "	Left,		25

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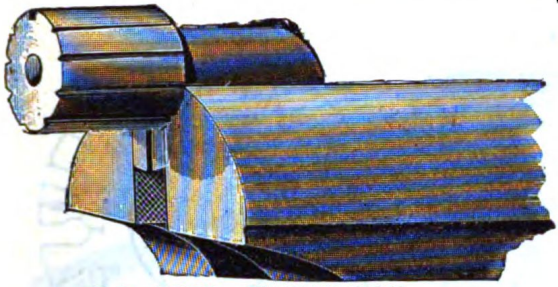
TOOLS F AND G.



NO. 1530. FILE BLOCK.

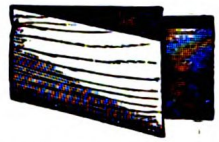
Each $1 00
Boxwood Filing Block, each, 5 to 10c.
Per dozen, assorted 50

NO. 1531. WILCOX'S TURRET FILING BLOCK.

When fastened in the vise the turret or top can be turned either way.
Price $1 00

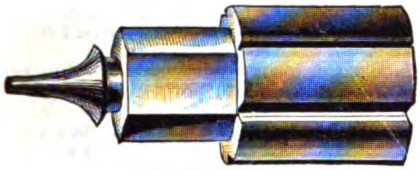
NO. 1532. NEW STYLE STEEL FILE BLOCK AND STAKE COMBINED.

Each $0 50
No. 1533. Plain, no holes.
Each $0 40



NO. 1536. FILING PINS.

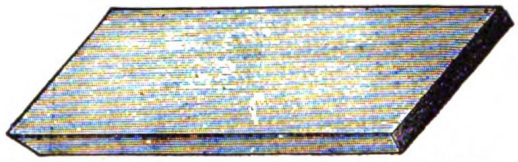
Price.....each, $0 15



Cut Full Size.

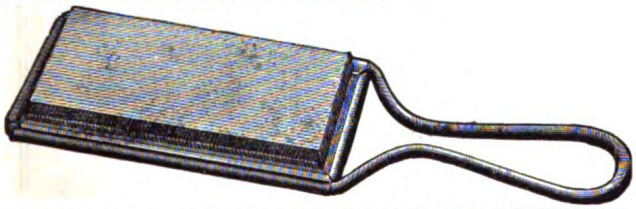
NO. 1534. NEW STYLE HAND STAKE AND FILING BLOCK COMBINED.

Price.....each, $0 40



NO. 1535. BOXWOOD FILING BLOCK.

Square, ½x6.....each, $0 10



NO. 1538. PATENT FILE CARD OR CLEANER.

Price.....each, $0 15

NO. 1544. KEY GAUGE.

Price.....$0 40
Nickel-plated..... 50

NO. 1545. BARREL ARBOR GAUGE.

Each.....$0 85
Nickel-plated..... 50

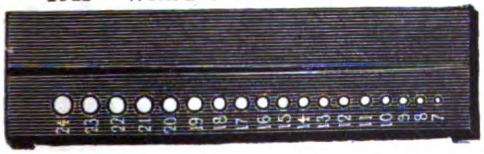
PATENT FILE CLEANER.

Steel Back and Frame.

No. 1540. Without Picker.....each, $15
" 1541. With Picker and Hardened Steel Wire, " 20

NO. 1537. LONG KEY GAUGE.

Price.....each, $0 40
Nickel-plated..... " 60



REVERSE SIDE OF 1542.

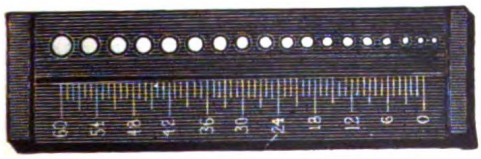
HEIGHT GAUGE.

For taking heights of pinions, Cylinders, Staffs, etc., without unscrewing the plates.

No. 1548. . . .Price, $0 90
" 1549. In Case. .....Price, $1 15
" 1550. Nickel-plated, extra.. 20

PIVOT GAUGE.

No. 1546. .....Price, $0 40
No. 1547. Nickel-plated " 55



JEWEL AND PIVOT GAUGE. NO. 1542.

No. 1542. Price $0 75
" 1543. Nickel-plated..... 95

CYLINDER GAUGE.

No. 1551. Price .....each, $0 80
" 1552. Finest quality Steel..... " 1 00
Nickel-plating, extra, 20c.

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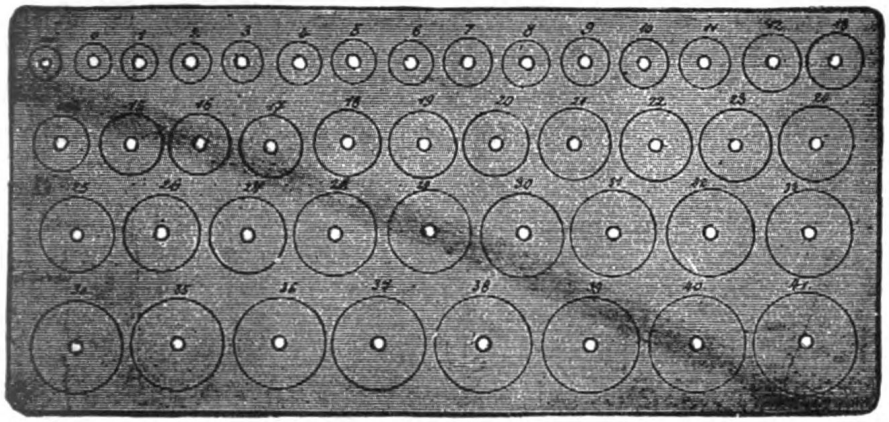
TOOLS C.



NO. 1563. SMALL WHEEL GAUGE.

Price.....$1 20

Cut is ¾ Size.

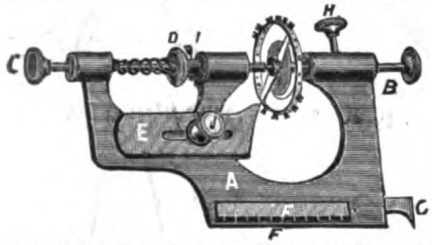
NO. 1564. BROWN & SHARPE'S GAUGE, METAL AND WIRE.

Dial for measuring Thickness of Springs, for metals.

Each.....$2 50

ENGLISH STANDARD WIRE GAUGES.—CAST STEEL

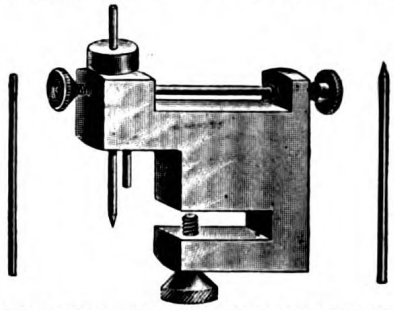
No. 1568. Large round No. 0 to 36, each, $2 00
No. 1569. Small " " 6 to 36, " 1 25



BEARDSLEY'S BALANCE STAFF GAUGE AND WHEEL TRUING CALIPERS.

This cut partially represents Beardsley's Patent Combination Balance Staff Gauge, Jewel and Pivot Gauge, Wheel Truing Caliper and Hairspring Vibrator; is light, convenient, quick, accurate and perfectly practical in every respect. An apprentice can use it with ease and accuracy. Takes measurements for total length of staff, height of balance shoulder, table roller, and throat in cylinders from end of lower pivot, and saves the necessity of any adjusting to end shake of balance after the finished staff is taken from the lathe. For Balance and Wheel Truing Caliper it excels all others. Wheels are removed and replaced much quicker with no danger of injury to pivots. Can detect the slightest variation in truth of table roller. Full description accompanies each Gauge.

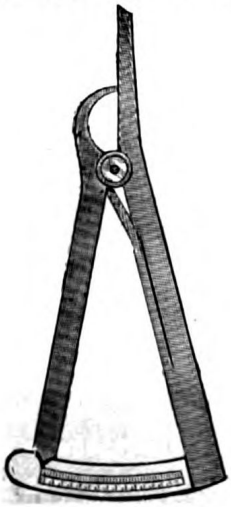
No. 1570. Price of Staff Gauge and Wheel Truing Caliper.....$3 00
" 1571. With Hairspring Vibrator Attachment..... 4 00
" 1572. With Jewel and Pivot Gauge and all Attachments, complete in case..... 5 00
" 1573. Nickel-plated..... 5 50



NO. 1574. FACILITY STAFF AND PINION GAUGE.

By the use of this gauge you can make a new Staff or put in a new Pinion with less trouble than you can pivot an old one. There is no bothering with drills, and no danger of spoiling a good balance wheel. The measurements are taken directly from the watch, are extremely close and very quickly made, and as the old staff is not used at all there is no chance of being misled or having to allow for previous errors. With full directions.

Price.....$3 00



DEGREE GAUGE.

With projecting jaw for large flat surface.

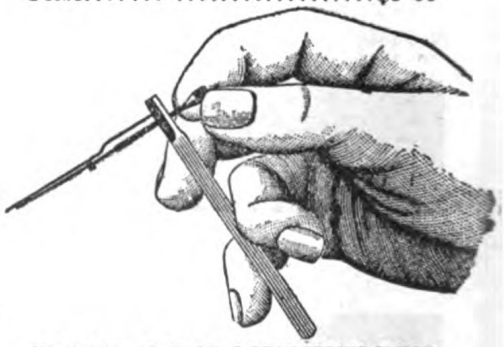
No. 1612. Price.....each, $0 75
" 1613. Nickel-plated..... " 90

Cut half size.

NO. 4306. GROSSMAN'S MILLIMETER GAUGE.

This tool is especially adapted for taking the measure of staffs, pinions, etc., to be replaced. The distance between shoulders can be accurately measured to the one-twentieth of a millimeter. The spring on this Gauge is so arranged that the pressure is uniform at every point. Capacity, 12 millimeters.

Price.....$1 75



NO. 1613½. O. K. SELF-REGISTERING GAUGE.

A Very Handy and Useful Tool for Every Watchmaker

In selecting or putting in a cylinder balance or pallet staff, pivot, pinion, wheel, roller or any such work it will save half the time.

It also gives precise distance required from point of pivot to roller, hair spring collet, balance, pallet stones, tooth of scape wheel, wide slot in cylinder, etc., etc. It saves boiling of wax to try the cylinder before it is accurately finished.

Price.....$0 75

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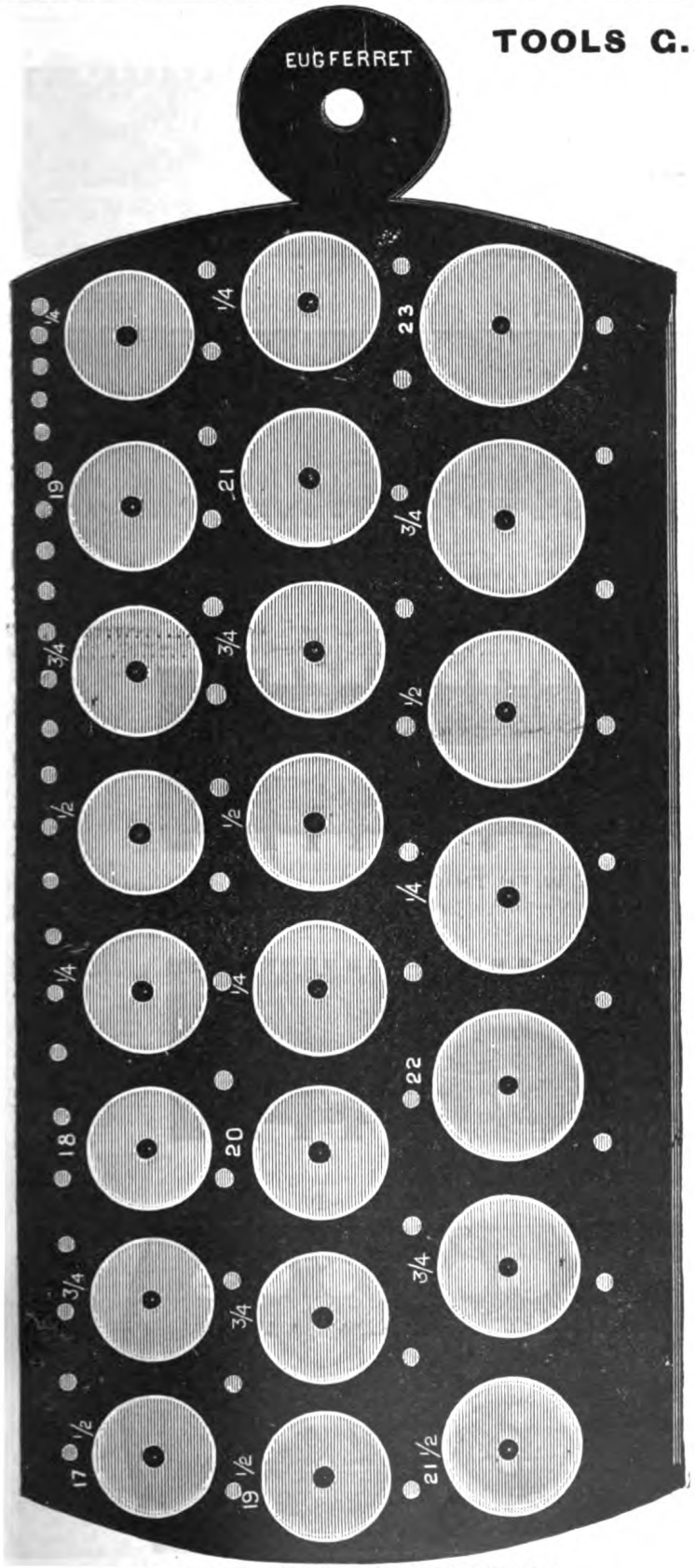
TOOLS G.



NO. 1575. LARGE WHEEL GAUGE.

Reverse side of this plate for measuring wheels from 3 to 17¼.

Price in ¼.....$3 00 Price in ⅛.....$3 50

WEIGHT 12 DWT.

CUT FULL SIZE.

NO. 1576. CLARK'S COMPARATIVE GAUGE.

WHAT YOU CAN DO WITH THIS GAUGE.

A tool or instrument to compare one piece of material with another, and all *comparisons are made instantaneous. It will give you* the exact strength of any Hairspring, from the most delicate to the largest American, Swiss or English; the depth of a Barrel showing the exact width of Mainspring required. It is ten times more accurate than the Swiss Wheel Gauge, giving ten sizes for every one-fourth Size of Swiss Gauge. You can tell if your wheel is round. It will show you if a tooth is too short or too long.

It will show you if a Pallet Stone sets too far out or too far in. It will indicate the length of a staff, cylinder or pinion from one end to the other, or from end to shoulder or shoulder to shoulder, etc. In fact it will measure correctly and instantaneously everything from one-thousandth to one inch.

It is invaluable as a Hairspring, Wheel, Pallet, Staff, Pivot, Height or Comparative Gauge.

Price.....$2 75

CUT IS FULL SIZE.

NO. 1577. GAUGE, HAIRSPRING

Bottom's.....each, $1 10

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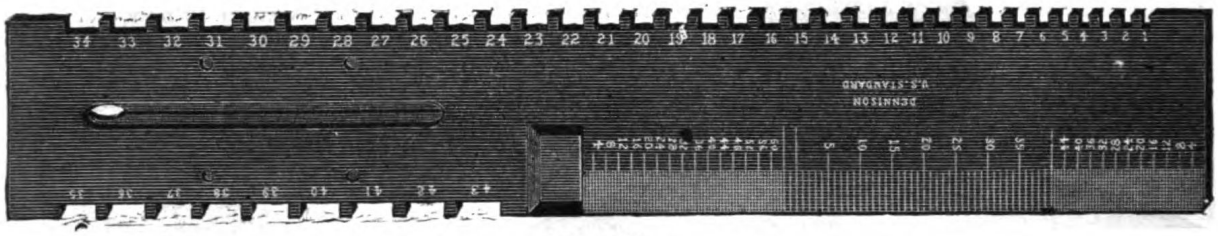
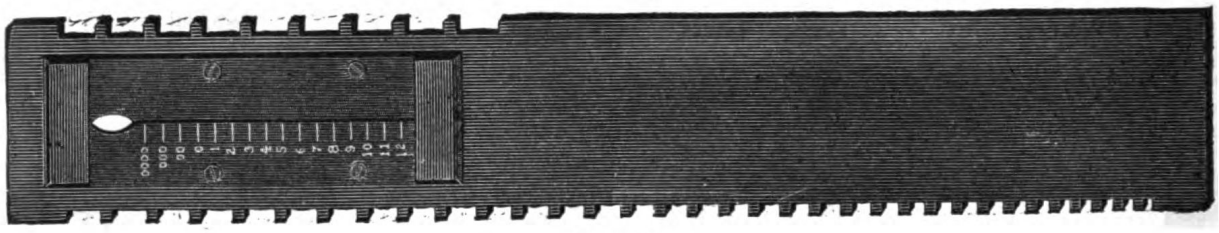
TOOLS G.



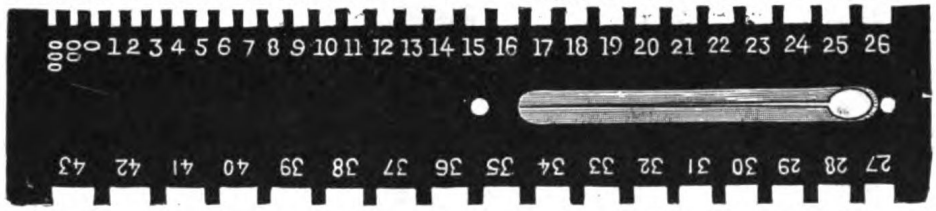
NO. 1584.



NO. 1586.
Cuts showing reversed sides.

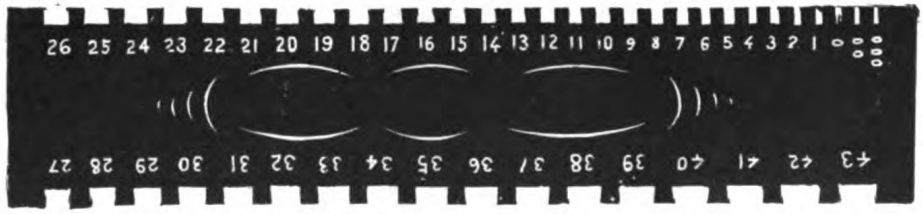
DENNISON'S MAIN SPRING GAUGES.

No. 1584. Plain.....$2 00
" 1585. Nickel Plated..... 2 40
No. 1586. With Thickness Gauge.....$2 50
" 1587. Nickel Plated..... 3 00



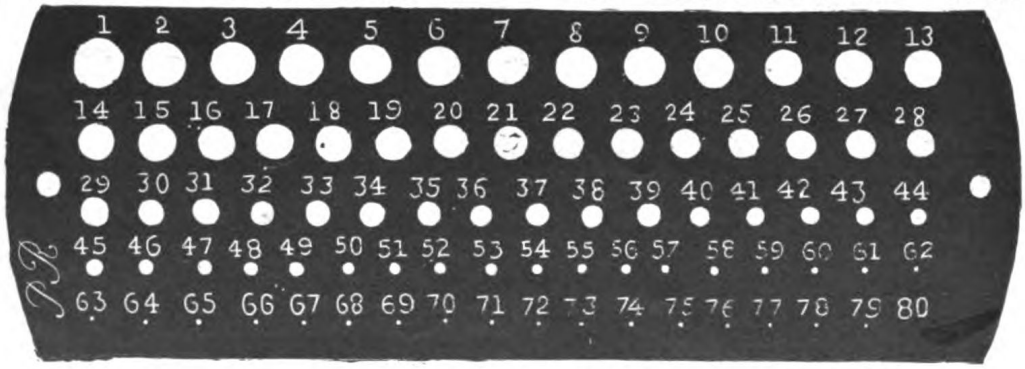
MAIN SPRING GAUGE WITH THICKNESS.

No. 1588. Price.....$0 40
" 1589. " Extra Quality Finish..... 60
No. 1590. Price, Nickel Plated.....$0 60
" 1591. " " " 80



MAIN SPRING GAUGE.

No. 1592. Price.....$0 30
No. 1593. Price, Nickle Plated.....$0 50



WIRE GAUGE.

No. 1594. 70 holes.....each, $1 00
" 1594½. " best quality ..... " 1 25
No. 1595. 80 holes.....each, $1 25
" 1595½. " best quality..... " 1 50

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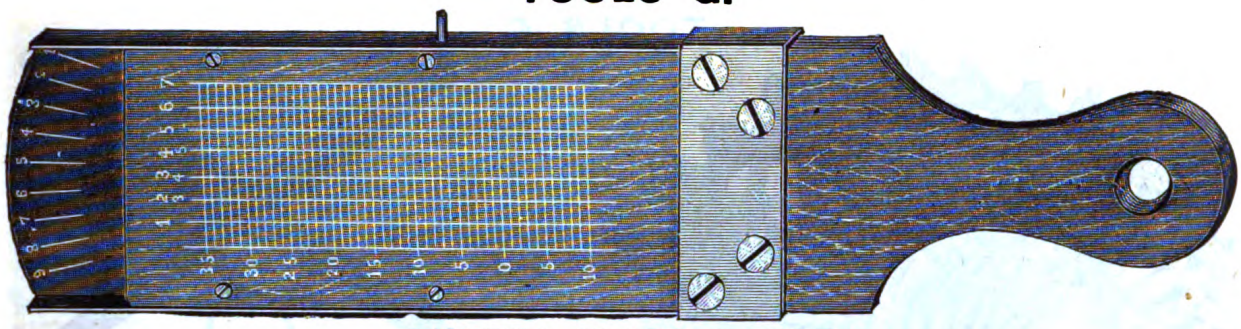
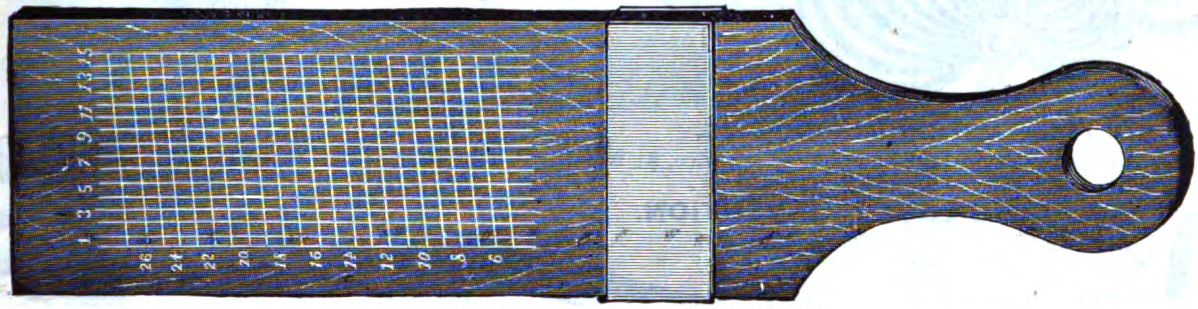
TOOLS G.



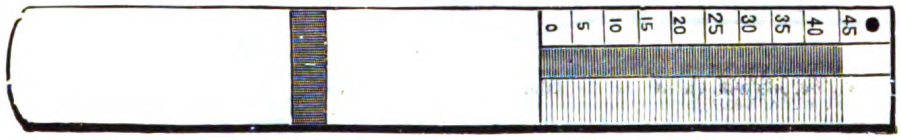
GENEVA GLASS GAUGE.

No. 1600. With Height Gauge, Extra Quality, Style and Finish..... .....Each, $2 00



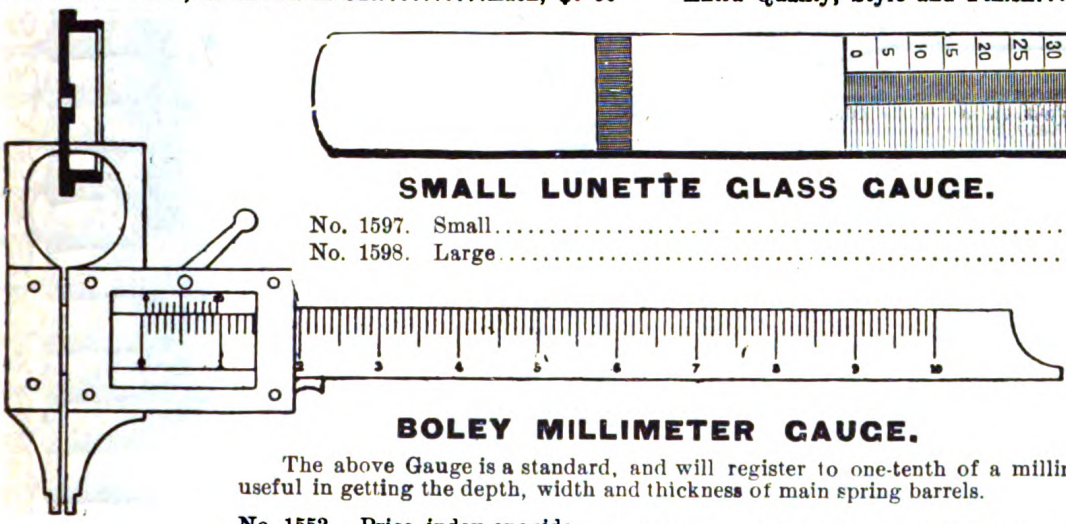
GENEVA GLASS GAUGE.

No. 1599. Plain, as shown in cut.....Each, $0 50 Extra Quality, Style and Finish.....Each, $0 75



SMALL LUNETTE GLASS GAUGE.

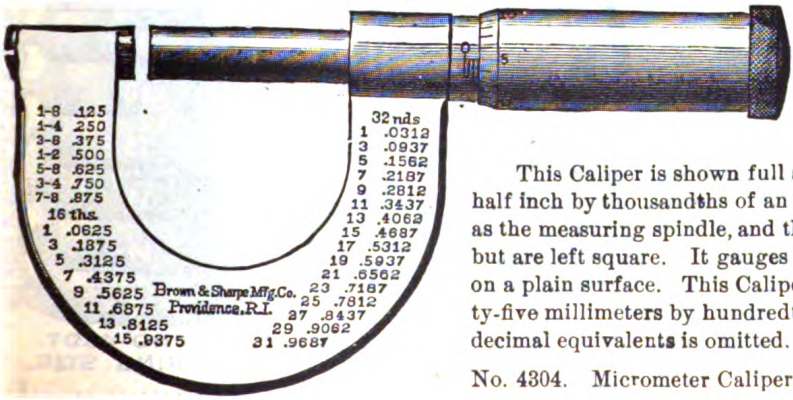
No. 1597. Small.....Each, $0 20
No. 1598. Large..... " 0 30



BOLEY MILLIMETER GAUGE.

The above Gauge is a standard, and will register to one-tenth of a millimeter, and is especially useful in getting the depth, width and thickness of main spring barrels.

No. 1553. Price, index one side.....Each, $1 00
No. 1554. " " " Genuine Boley..... " 1 25
No. 1555. " " both sides, Genuine Boley ..... " 1 75



This Caliper is shown full size in cut, and measures all sizes less than one-half inch by thousandths of an inch. The outer edge of the frame is the same size as the measuring spindle, and the edges of the measuring surfaces are not beveled but are left square. It gauges under a shoulder, or measures a small projection on a plain surface. This Caliper is also made to measure all sizes less than twenty-five millimeters by hundredths of a millimeter. When so made the table of decimal equivalents is omitted.

No. 4304. Micrometer Caliper, English or Metric Measure..... ....$5 00

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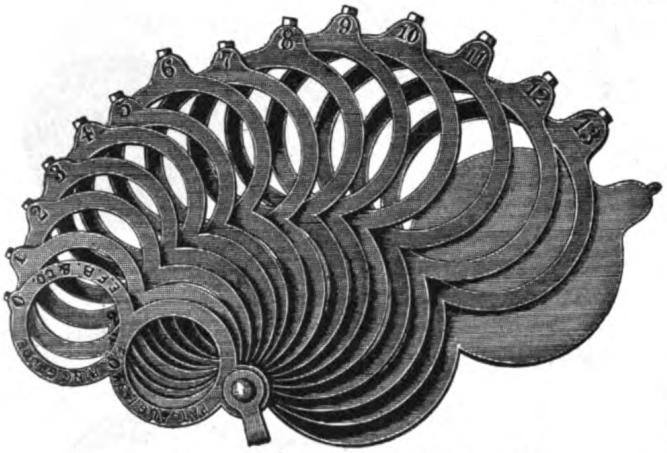
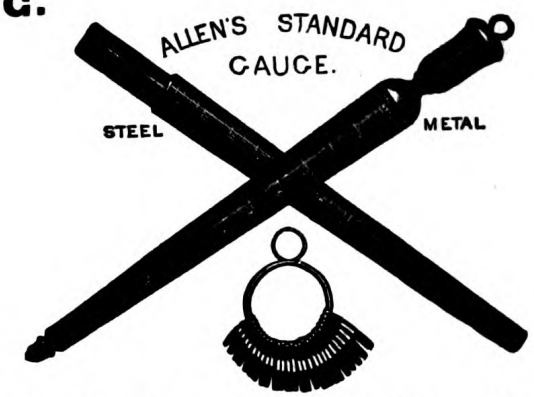
TOOLS C.

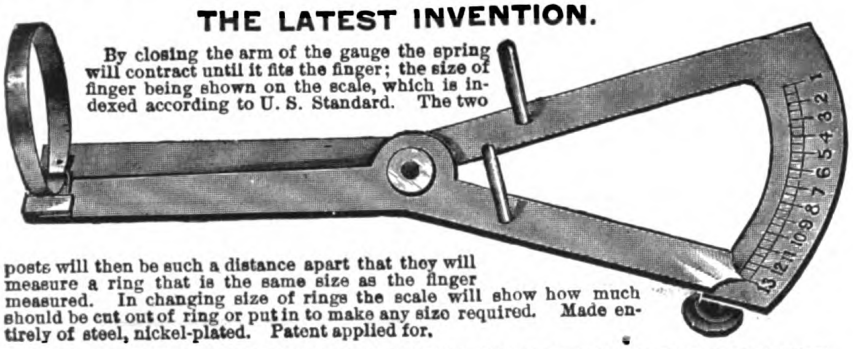




No. 1602. Allen's Standard Ring Gauge Stick...each, $0 60
No. 1603. Allen's Standard Ring Sizes, per set, " 80
No. 1604. Celluloid Ring Sticks..... " 1 00

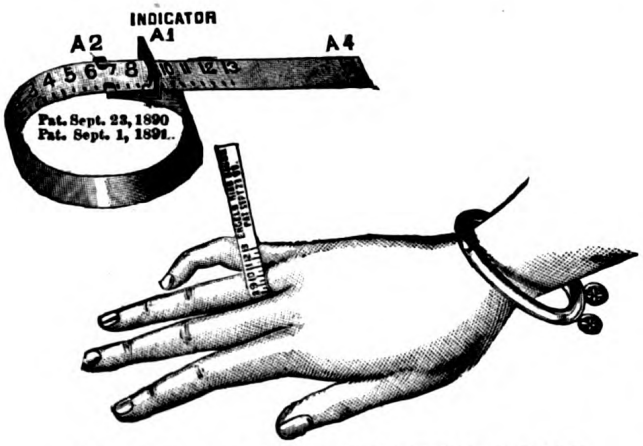
NO. 1605. ALUMINUM RING SIZE.
The best and neatest Gauge in the market.....price, $1 25

THE LATEST INVENTION.



By closing the arm of the gauge the spring will contract until it fits the finger; the size of finger being shown on the scale, which is indexed according to U. S. Standard. The two posts will then be such a distance apart that they will measure a ring that is the same size as the finger measured. In changing size of rings the scale will show how much should be cut out of ring or put in to make any size required. Made entirely of steel, nickel-plated. Patent applied for.

NO. 1611. MILLER'S LIGHTNING FINGER AND RING GAUGE.
Price.....each, $0 75

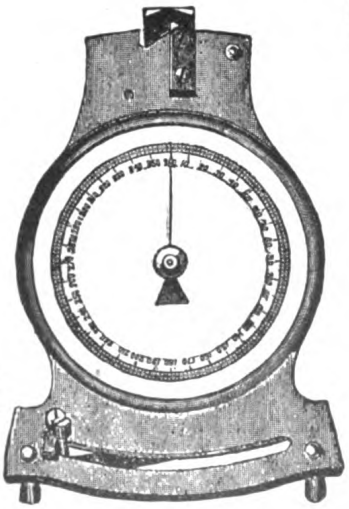


NO. 1601. ENGEL'S PAT. RING GAUGE. USED BY ALL.

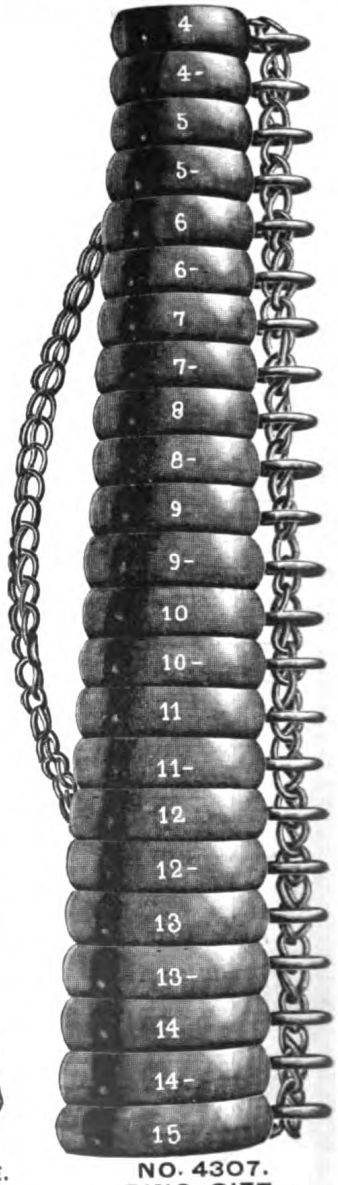
DIRECTIONS.—The plain end A4 being inserted under the clasp hooks A2 and passing through eye A1 the indicator, thus forms the coil. The small hook on eye being then lodged in notch coming nearest to the size of finger, will make complete ring to try on. The eye crossing figure indicates number of size desired.

Price.....each, $0 15; per doz., $1 25

Can furnish them for advertising purposes in lots of 1,000 or more, with name, etc. Price given on application. State quantity desired.



NO. 1579. DIAL GAUGE.
Divided in 360 degrees.
Price.....each, $3 75



NO. 4307. RING SIZE.
Price.....$1 50

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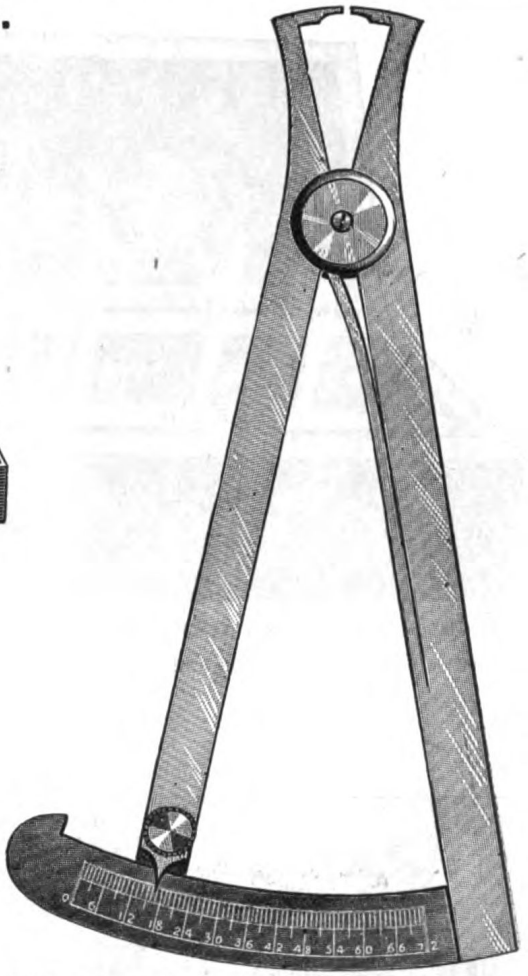
TOOLS C.

PIVOTING GRAVERS.

Nos. 5, 6, 8 and 10, used for ordinary turning purposes.
No. 7, cut off tool.
No. 9, square end surface turning.
No. 11, conical pivots.
No. 12, jewel sinking.
No. 13, hollowing out.
No. 14, burnisher, used by hand in jeweling in lathe.
These Gravers are first-class every way. A complete set for use with American lathe.

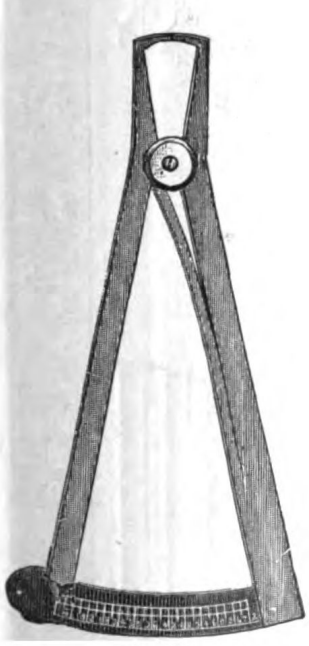
No. 1620. Price.....set, $2 50



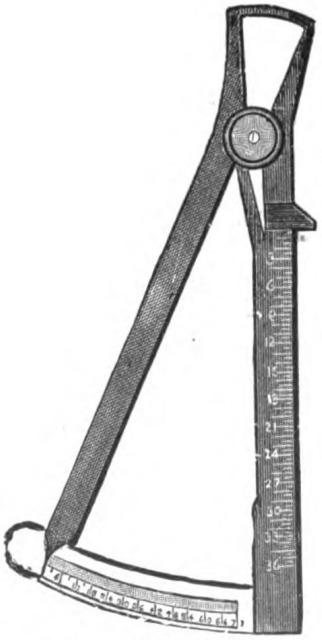
DEGREE GAUGE WITH THUMB SCREW.

Always being in position by tightening screw, thus avoiding remeasuring when in use, by having exact measurement when required. Length 6 inches, width 3 inches.

No. 1618. Plain.....each, $0 50
" 1618½ " Nickel-plated ..... " 75
" 1619. With rule..... " 70
" 1619½ " Nickel-plated..... " 90



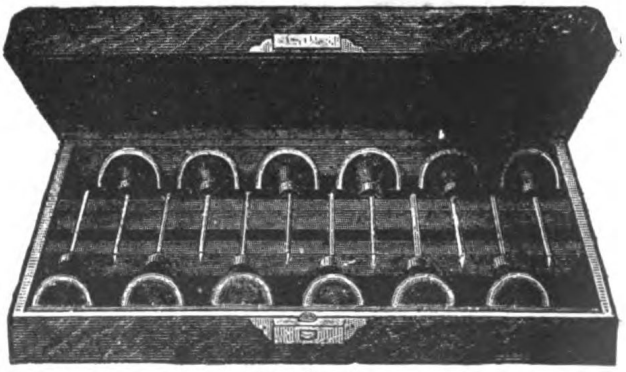
PLAIN.



WITH RULE.

DEGREE GAUGE.

No. 1614. Plain.....each, $0 40 Extra finish, each, $0 50
" 1615. " Nickel plated, extra..... " 20
" 1616. With rule, each, $0 50 Extra finish, " 70
" 1617. " Nickel plated, extra..... " 20



CUT IS ¼ SIZE.

SET OF GRAVERS IN BOX.

Set of 6 Gravers consists of 1 square, 1 flat, 1 lozenge, 1 knife, 1 onglette, 1 lining. Set of 12 Gravers consists of 2 square, 3 flat, 1 lozenge, 1 knife, 1 onglette, 2 half-round, 2 lining.

No. 1622. Sets of 6, in Black Walnut Box, Velvet lined..$1 75
" 1623. " 12, " " " " " .. 2 75

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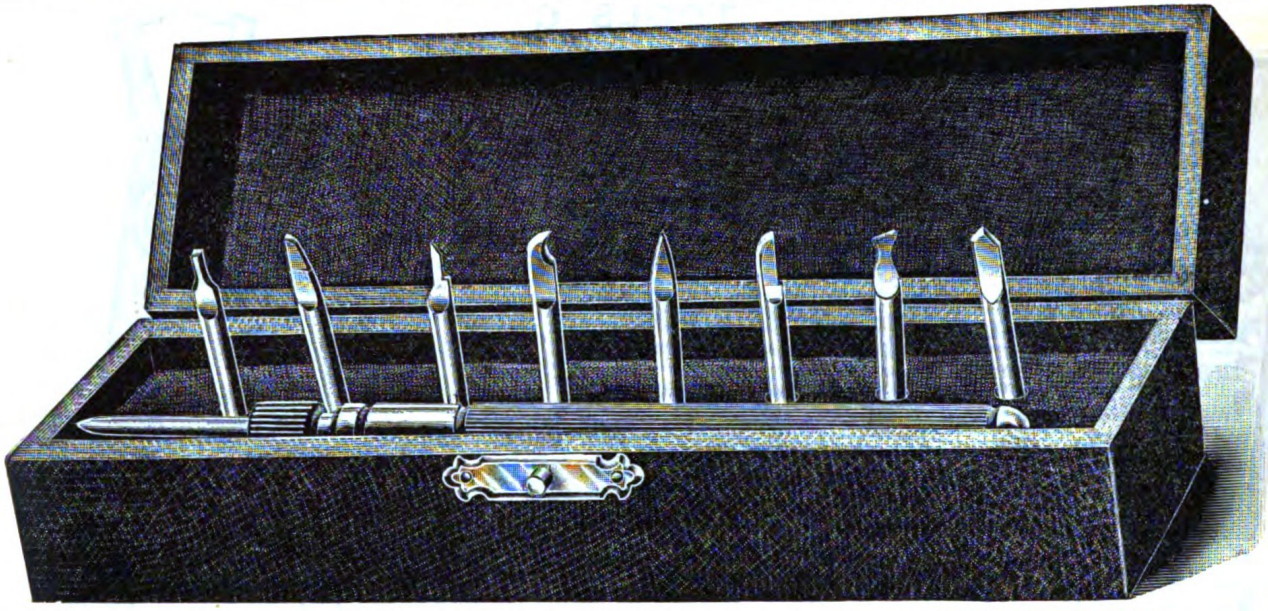

NO. 4308. PIVOTING GRAVERS WITH ADJUSTABLE HANDLES.

Price, per set of 9 turning tools and handle..... $1 50

NO. 4309.
"GUARANTEED" TURNING GRAVERS.

This is one of the finest set of Gravers on the market. Consists of 10 Gravers in a fine morocco case. Lined. The handles of the Gravers are made of rubber, making it an ornament to any watchmaker's bench.

Price, complete as shown above.....per set, $5 00

NO. 4310.
SUPERIOR PIVOTING GRAVERS.

Price, per set in leather case....$1 50

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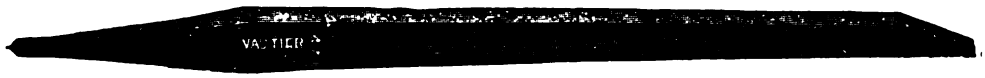
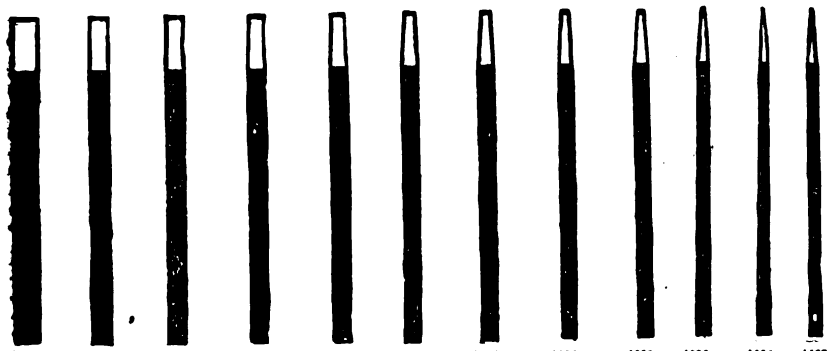
TOOLS G.

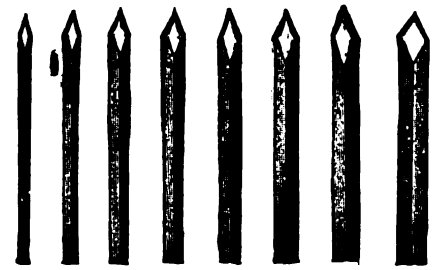




1624 1625 1626 1627 1628 1629 1630 1631 1632 1633 1634 1635

VAUTIER FLAT GRAVERS.

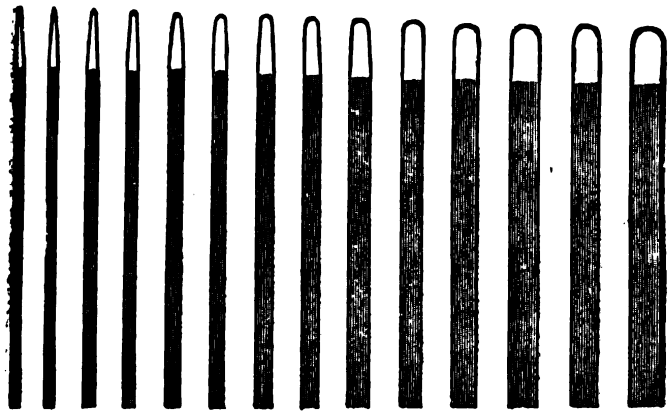
Each.....$0 10 Per doz.....$1 00



1636 1637 1638 1639 1640 1641 1642 1643

GRAVER VAUTIER LOZENGE.

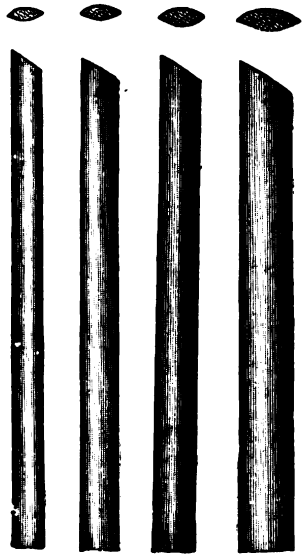
Each.....$0 12 Per doz.....$1 25



1648 1649 1650 1651 1652 1653 1654 1655 1656 1657 1658 1659 1660 1661

GRAVER VAUTIER ROUND EDGE OR GOUGE.

Each.....$0 10 Per doz.....$1 00

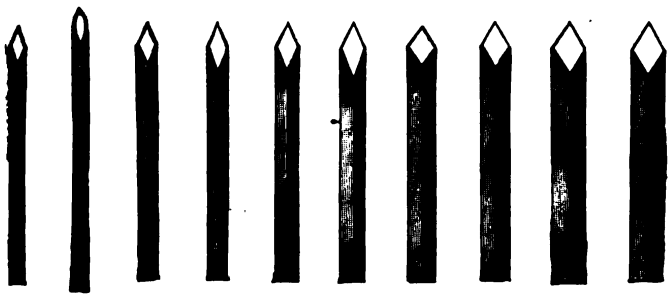


1644 1645 1646 1647

VAUTIER ELLIPSE GRAVERS.

Each.....$0 10

Per dozen..... 1 00



1662 1663 1664 1665 1666 1667 1668 1669 1670 1671

GRAVER VAUTIER SQUARE.

Nos. 1662 to 1669.....each. $0 10 Per dozen, $1 15

" 1670 to 1671..... " 12 " 1 25

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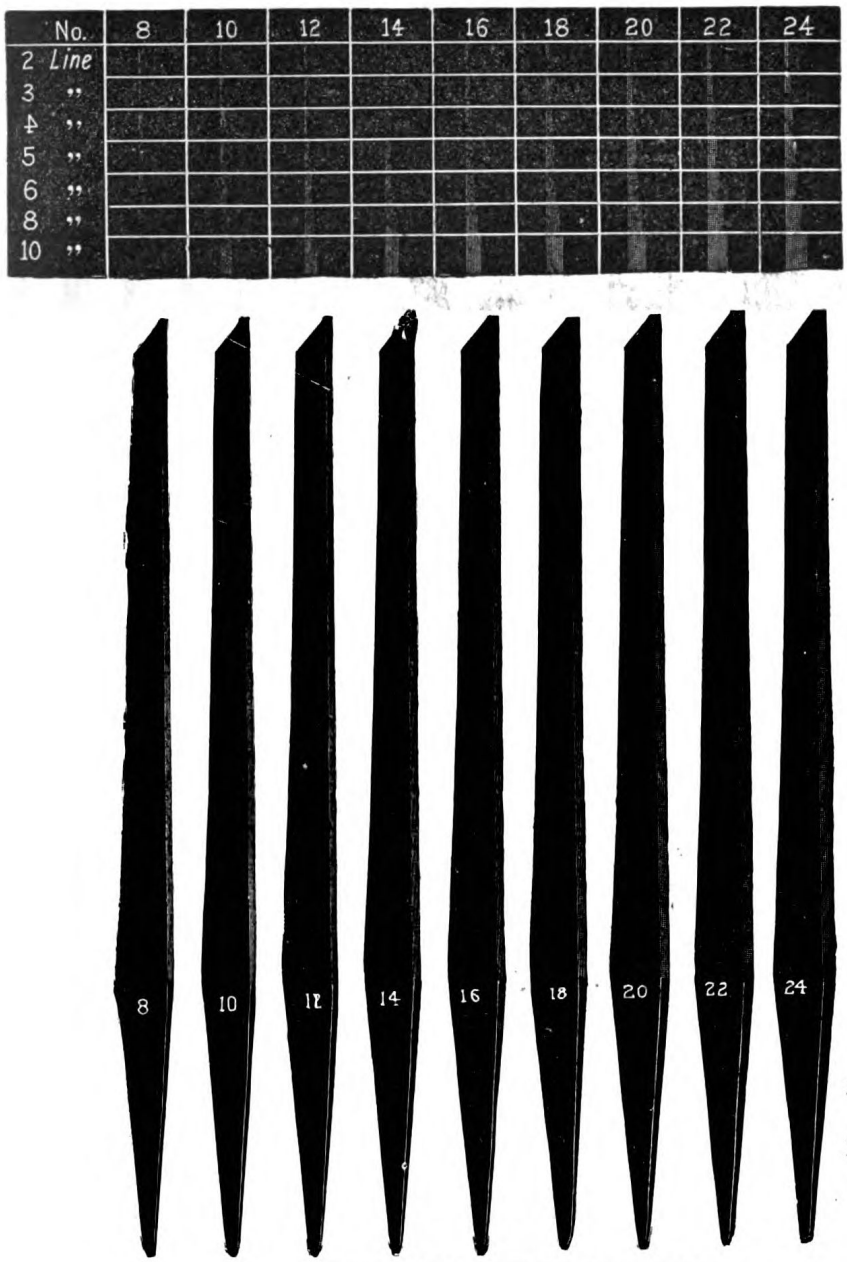
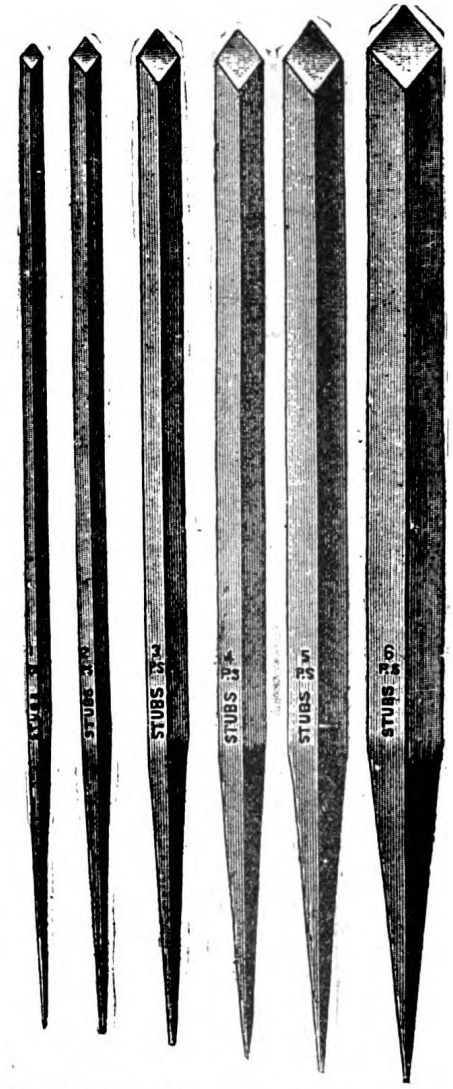
TOOLS G.





No. 1673. 1674 1675. 1676. 1677. 1678.

STUBS SQUARE GRAVERS.

No. 1673 to 1675, each, $0 10; per doz. $1 00
" 1676 to 1677 " 12; " 1 10
" 1678 " 15; " 1 50

NO. 1672. LINING GRAVERS.

To avoid the many errors made in ordering Lining Gravers, we have set up the above scale, which will enable any one to see at a glance what is wanted. The illustrations are most carefully executed, and exact copies of the originals. Number on the top line corresponds with the number on the graver; the shadow denotes the number of lines to the left, such as Graver No. 18, line 5.

Gravers, Lining.....each, $0 30; per doz., $3 00

NO. 1679. VAUTIER KNIFE GRAVER.

Price.....each, $0 10; per doz., $1 00

NO. 1680. VAUTIER ANGLET GRAVER. For Size, See 1680, 1681, 1682.

Price.....each, $0 10; per doz., $1 00

No. 1680 1681 1682

ANGLET.

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TOOLS C.

No. 1683. Burt's Gouge.

Burt's Round Edge or Gouge.....each, $0 35 Per dozen, $3 75

No. 1686. Burt's Flat Graver.

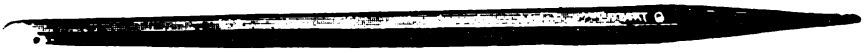
Burt's Flat Graver.....each, $0 35 Per dozen, $3 75

No. 1689. Burt's Square.....each, $0 35 Per dozen, $3 75

No. 1690. Burt's Square.....each, $0 35 Per dozen, $3 75

No. 1691. Burt's Square.....each, $0 35 Per dozen, $3 75

BURT'S SQUARE GRAVERS.



No. 1692. Burt's Lozenge.....each, $0 35 Per dozen, $3 75

No. 1693. Burt's Lozenge.....each, $0 35 Per dozen, $3 75

BURT'S LOZENGE GRAVER.

No. 1694. Square Taper Graver.....each, $0 10 Per dozen, $1 00

No. 1695. Square Taper Graver.....each, $0 10 Per dozen, $1 00

No. 1696. Square Taper Graver.....each, $0 10 Per dozen, $1 00

No. 1697. Square Taper Graver.....each, $0 10 Per dozen, $1 00

No. 1698. Square Taper Graver.....each, $0 10 Per dozen, $1 00

VAUTIER SQUARE TAPER GRAVER.

No. 1699. Lozenge Taper Graver.....each, $0 10 Per dozen, $1 00

No. 1700. Lozenge Taper Graver.....each, $0 10 Per dozen, $1 00

No. 1701. Lozenge Taper Graver.....each. $0 10 Per dozen, $1 00

VAUTIER LOZENGE TAPER GRAVER.

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TOOLS G.

NO. 1705. SQUARE TAPER BENT GRAVER.

Price.....each, $0 12; per dozen, $1 25

NO. 1706. SQUARE TAPER BENT GRAVER.

Price.....each, $0 12; per dozen, $1 25

NO. 1707. SQUARE BENT GRAVER.

Price.....each, $0 12; per dozen, $1 25

All of the above Taper Gravers are for Engravers' use only.

NO. 1708. BURT'S BENT GRAVER.

Price.....each, $0 35; per doz. $3 75

NO. 1709. BURT'S BAYONET GRAVER.

Price.....each, $0 35; per doz., $3 75

NO. 1710. VAUTIER SHORT BAYONET GRAVER.

Price.....each, $0 15

NO. 1711. VAUTIER BAYONET GRAVER.

Best Quality.....each, $0 25

NO. 1712. VAUTIER ANGLET BAYONET GRAVER.

Price.....each, $0 25; per dozen..... $2 75

PATENT INSIDE RING GRAVER, B.

No. 1713.....each, $0 25

GRAVER, "OUR OWN."

No. 1714. Price.....each, $0 50 No. 1715. Imported .....each, $0 25

We only carry First Quality Gravers in Stock.

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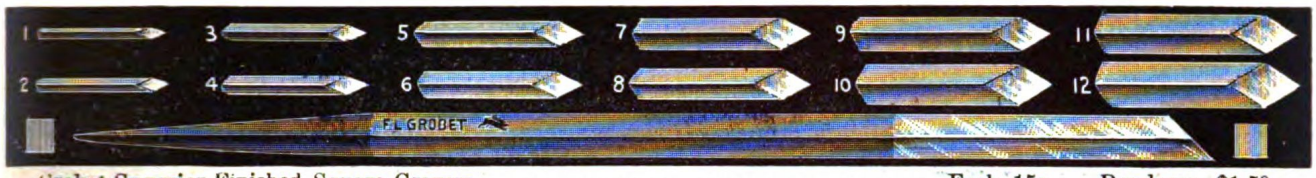
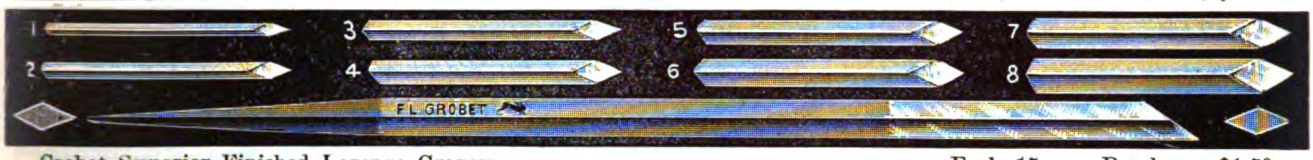
GROBET SUPERIOR FINISHED GRAVERS.

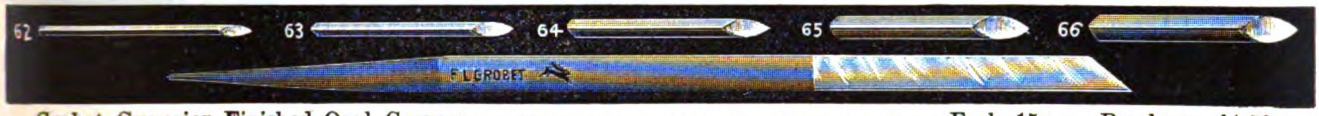


Grobet Superior Finished Square Gravers..... Each, 15c. Per dozen, $1.50

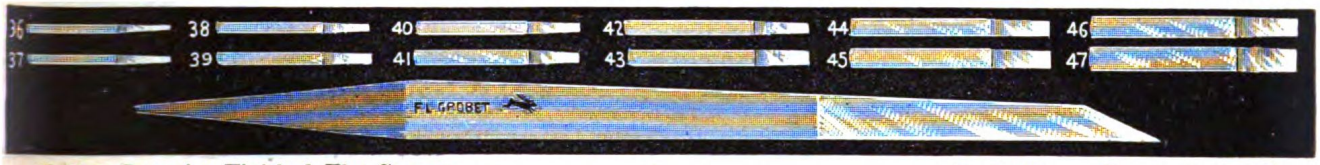


Grobet Superior Finished Lozenge Gravers..... Each, 15c. Per dozen, $1.50

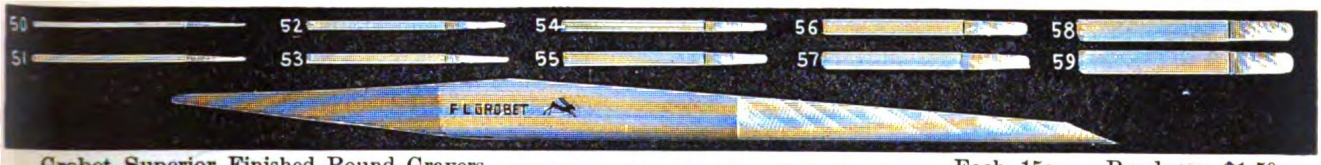
Grobet Superior Finished Onglette Gravers..... Each, 15c. Per dozen, $1.50



Grobet Superior Finished Oval Gravers..... Each, 15c. Per dozen, $1.50

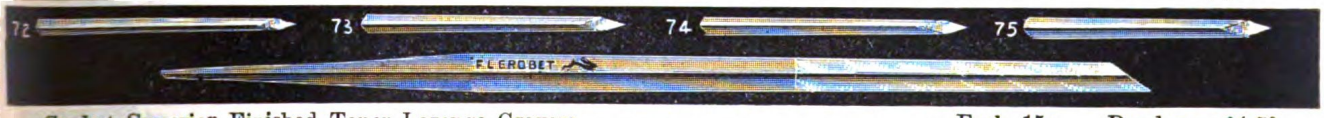


Grobet Superior Finished Flat Gravers..... Each, 15c. Per dozen, $1.50



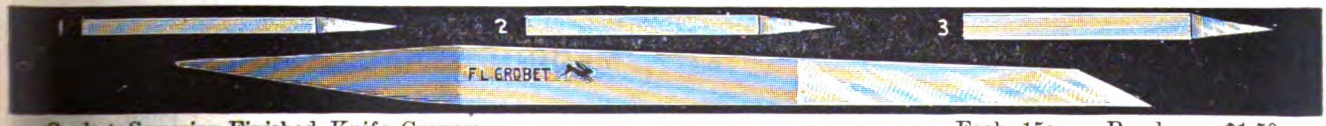
Grobet Superior Finished Round Gravers..... Each, 15c. Per dozen, $1.50

Grobet Superior Finished Taper Square Gravers..... Each, 15c. Per dozen, $1.50



Grobet Superior Finished Taper Lozenge Gravers..... Each, 15c. Per dozen, $1.50

Grobet Superior Finished Lining Gravers..... Each, 30c. Per dozen, $3.00



Grobet Superior Finished Knife Gravers..... Each, 15c. Per dozen, $1.50

These tools are made by Grobet, the celebrated manufacturer of Swiss files, and are superior in quality to all other makes. The ends are finished with a high mirror polish, which produces a clean and true incision. Sold at the same price as ordinary unfinished gravers.

THEY ARE WORTHY OF A TRIAL. ASK FOR THEM!

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TOOLS G.

LANCASTER DOUBLE END GRAVERS.

No. 1717 .....

SMALL SQUARE.

No. 1718 .....

BAYONET, FOR SPOON WORK, ETC.

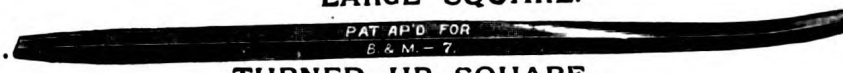
No. 1719 .....

ROUND BENT SQUARE.

No. 1720 .....
BENT SQUARE.

No. 1721 .....

LARGE SQUARE.

No. 1722 ..... 

TURNED UP SQUARE.

8

No. 1723 .....

STAR GRAVER.

No. 1724 .....
BENT MEDIUM SQUARE.

No. 1725 .....

HEAVY BENT SQUARE.

No. 1726 .....

LONG BENT SQUARE.

No. 1727 .....

HEAVY BENT SQUARE.

13

No. 1728 .....

SMALL ROUND.

14

No. 1729 .....

MEDIUM BENT ROUND.

15

No. 1730 .....

MEDIUM STRAIGHT ROUND.

Price ..... **Each, 50 cents**

Price, with Handle ..... **Each, 75 cents**

Made of the very best of steel, and Gravers at both ends.

WE CARRY ALL SIZES AND STYLES NOT ILLUSTRATED.

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TOOLS G.

LANCASTER DOUBLE END GRAVERS—Continued.

No. 1731 16

NARROW FLAT BENT.

No. 1732 17

MEDIUM FLAT BENT.

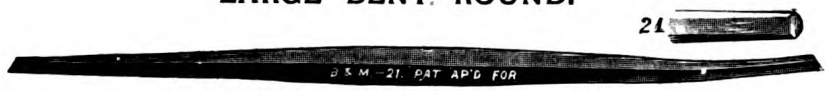
No. 1733 18

LARGE FLAT BENT.

No. 1734 20

LARGE BENT ROUND.

No. 1735 21



LARGE STRAIGHT ROUND.

No. 1736 22

SMALL DOUBLE LINE.

No. 1737 23

LARGE DOUBLE LINE.

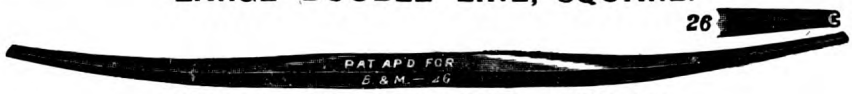
No. 1738 24

DOUBLE LINE, SQUARE.

No. 1739 25

LARGE DOUBLE LINE, SQUARE.

No. 1740 26

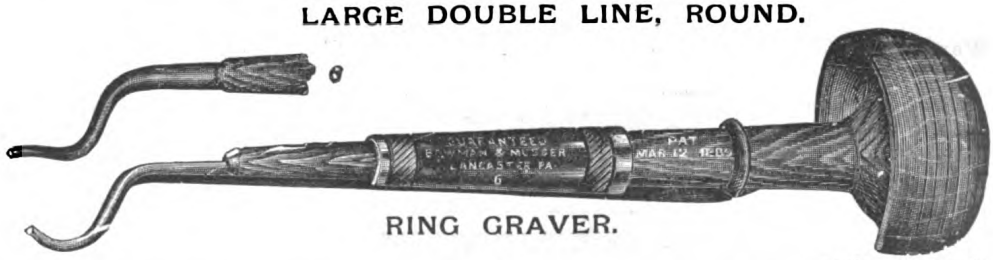


SMALL DOUBLE LINE, ROUND.

No. 1741 27

LARGE DOUBLE LINE, ROUND.

No. 1742 .....



RING GRAVER.

Price ..... each, 50 cents.
Price, with Handle ..... each, 75 cents.

In Sets of Five, Nos. 1717 to 1721, with Handles, ready for use, or Other Numbers, per set, $3.50.

Made of the best of steel, with Gravers at both ends.

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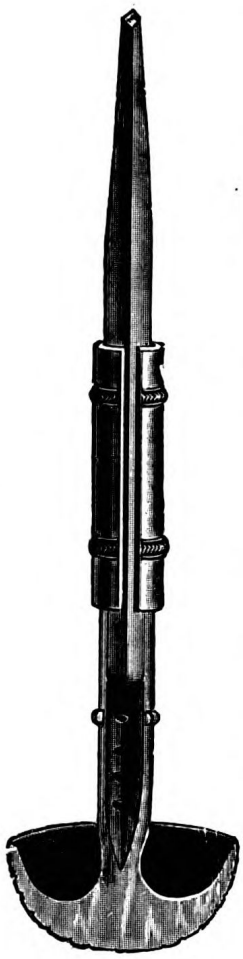
TOOLS E.



GRAVER WITH HANDLE, FLAT SIDE.

In Ordering THESE GRAVERS Give the NUMBER WITH Letter, and we will know Just What is Wanted.

You can Order a Single or a Set of Each Number.

No. 4311. A. Straight Graver, Numbering 1 to 20. 20 Smallest Point.

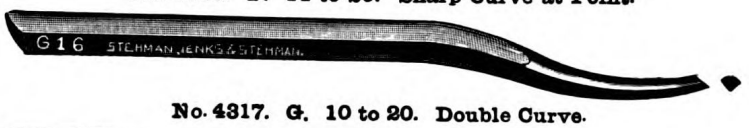
No. 4312. B. 10 to 20. Slight Curve on End of Blade.

No. 4313. C. 10 to 20. Slight Full Curve.

No. 4314. D 10 to 20. Slight More Full Curve

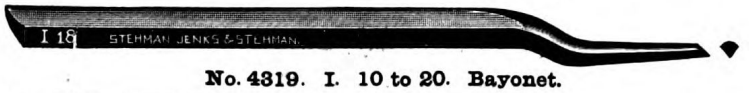
No. 4315. E. 10 to 20. Slight Still More Full Curve.

No. 4316. F. 14 to 20. Sharp Curve at Point.



No. 4317. G. 10 to 20. Double Curve.

No. 4318. H. 1 to 17. Flat Graver



No. 4319. I. 10 to 20. Bayonet.

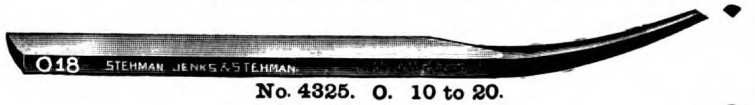
No. 4320. J. 10 to 20. Bayonet.

No. 4321. K. 10 to 20. Bayonet Sharp Bent.

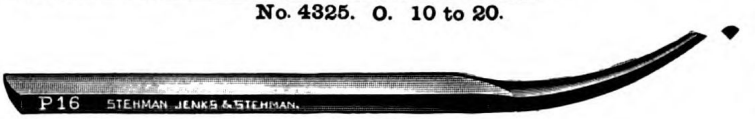
No. 4322. L. 10 to 20. Bayonet Sharp Bent.

No. 4323. M. 10 to 20. Sharp Full Curve.

No. 4324. N. 10 to 20. Sharp Full Curve.

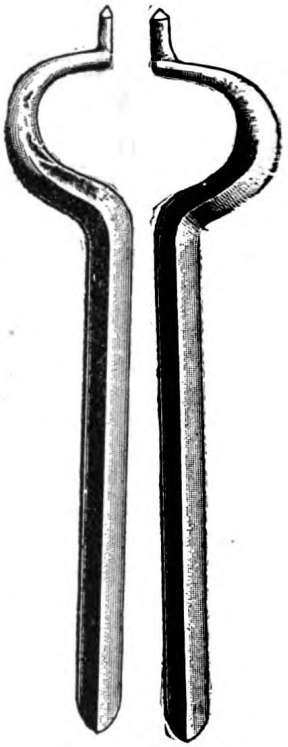


No. 4325. O. 10 to 20.



No. 4326. P.

STEHMAN, JENKS AND STEHMAN GRAVERS.



Left. 4327. Right. 4328.

RING GRAVERS

The Stehman, Jenks & Stehman Gravers are manufactured from special steel, and made expressly for the manufacturers of the Gravers. They are all accurately *tempered*, *ground* and *polished*, great care being taken also to have the Cutting Edge or Angle *absolutely* correct, thereby avoiding the liability to slip like in ordinary Gravers. The handles are all made or turned from the *solid* wood (not in two pieces like in the cheap handles). The woods used in the handles are snake billet ebony and coco bola, and, being hard and very close grain, are less liable to check or break. The ferrules are made of nickel silver, swedged under heavy pressure, and afterwards turned on a lathe, thus giving them a full spring temper. We keep all styles in assorted sizes.

Price, Single Graver, each	$0 50
Price, in sets of 6, with 2 handles	4 25
Price, in case, set	5 25
Handles, each	25

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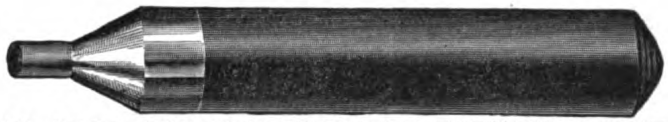
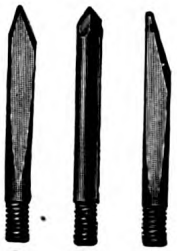
TOOLS E.

4 1 2 3



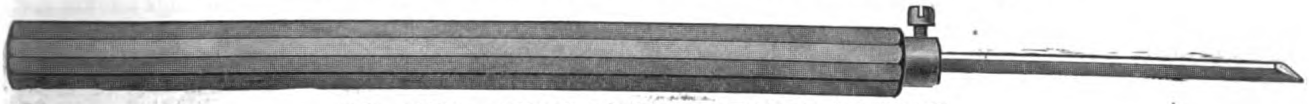


C B A

NO. 1757. INTERCHANGEABLE TURNING GRAVER FOR WATCHMAKERS.

Finished set of turning tools. Each point ground to correct shape. Especial attention is paid to the points. Each one is made from selected steel, carefully tempered and guaranteed. Set consists of three hard rubber handles and the following: No. 1 bit, square for straight turning; No. 2, for undercutting; No. 3, for conical pivots; No. 4, for polishing; A bit, turning jewel seat, B, for turning jewel bezel; C, for stripping tool. In velvet lined paper covered box.

Price, complete.....$2 00

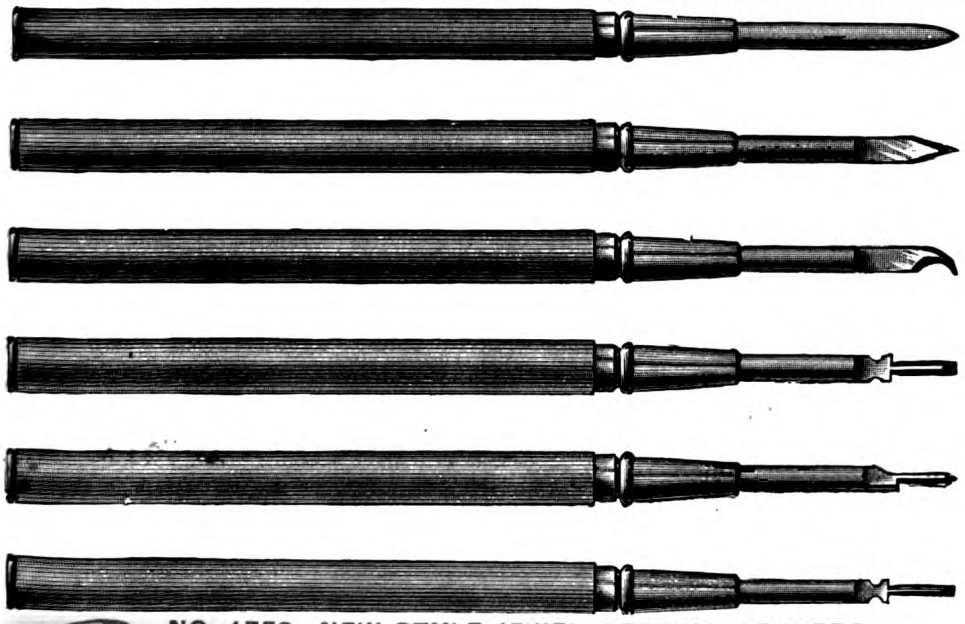


NO. 1756. RIES' PATENT GRAVER HANDLE.

THIS SHOWS GRAVER.

Ries' graver handle can be let out as it wears, perfectly rigid and parallel, takes any size graver. The most practical handle ever produced.

Price, Nickel-plated.....each, $0 25



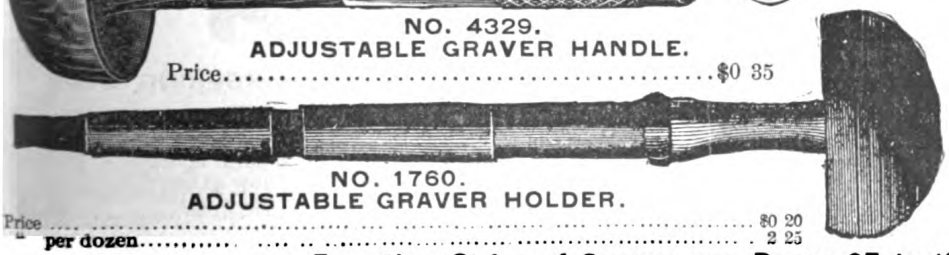
NO. 1758. NEW STYLE JEWEL SETTING GRAVERS.

Put up in sets of 6, as shown in cut, handle nickel-plated.

Price.....per set, $2 25

NO. 4329. ADJUSTABLE GRAVER HANDLE.

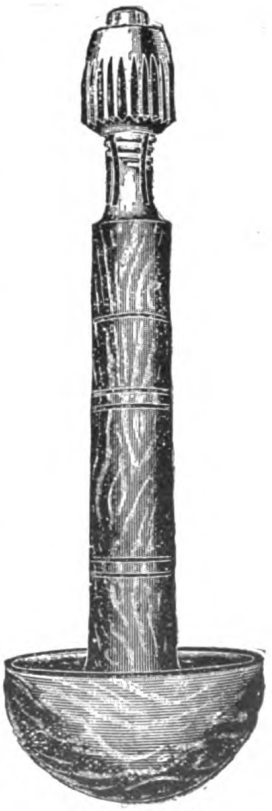
Price.....$0 35



NO. 1760. ADJUSTABLE GRAVER HOLDER.

Price.....$0 20

" per dozen.....2 25



NO. 4330. UNIVERSAL GRAVER HOLDER.

Price.....each, $0 30

" per dozen..... 3 50

For other Styles of Gravers see Pages 97 to 105.

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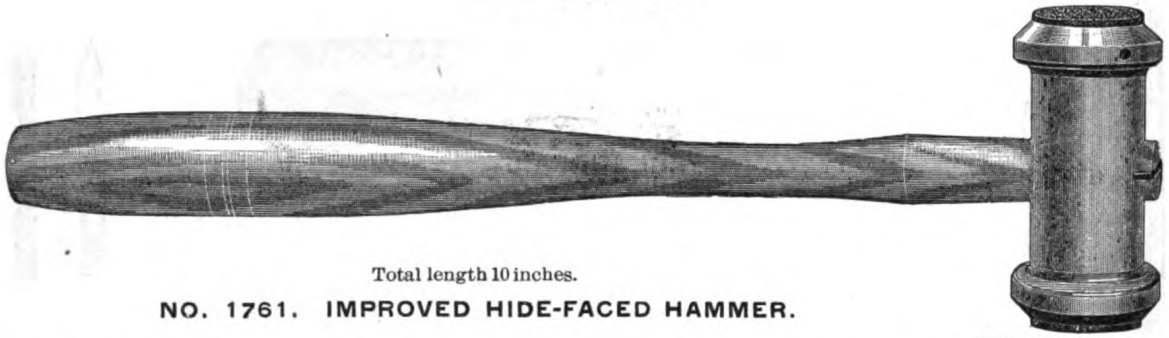
TOOLS H.



Total length 10 inches.

NO. 1761. IMPROVED HIDE-FACED HAMMER.

Weight 1¼ lbs.

This hammer will be found a very useful tool for the jeweler and metal worker. A hard, elastic blow can be given without injury to the work. It is an excellent substitute for the mallet. They are made of malleable iron, with rings screwed on at each end. These rings have an inside taper that holds the rawhide faces in their place. The faces when worn out can be quickly replaced.

Price.....each, $0 50
Extra Faces.....per pair, 0 05

HAMMER HANDLE.

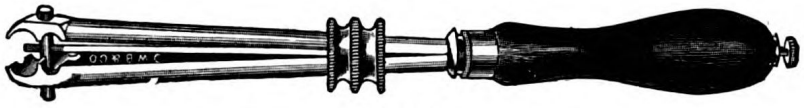
No. 1762. Whitewood—Small, Medium, Large, each, $0 05
Per doz..... 30

No. 1763. Ebony—Small, Medium, Large.....each, $0 10
Per doz..... 80

NO. 1764. CHASING HAMMER HANDLES.

Maple, Small and Medium.....each, $0 15; Large.....each, $0 20

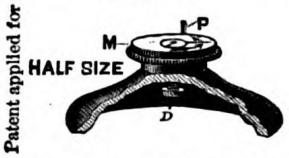
In ordering handles state what size hammer they are wanted to fit. See Hammers, page 107.



Full Size.

PATENT WATCH HAND REMOVER

No. 1765. Price, first quality.....each, $1 25; second quality, each, $1 00



NO. 1766. TESKE'S UNIVERSAL HAIRSPRING STUD INDEX.

A fine tool for lever cylinder. Duplex and chronometer movements.

Price.....$0 75

NO. 1767. HAIRSPRING COLLET REMOVER.

Nickel-Plated.....$0 25

NO. 1768. HAIRSPRING COLLET WRENCH.

Each.....$0 20

NO. 1769. NEW HAIRSPRING COLLET REMOVER.

Price.....$0 20

NO. 1770. WATHIER HAIRSPRING STUD INDEX.

Will indicate at once the proper position of the hairspring stud for any make of American Watches, by simply placing the balance on its disc. Directions how to use it.

Price.....$1 25

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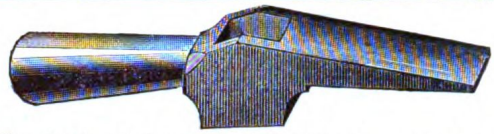
TOOLS H.

HAMMERS.

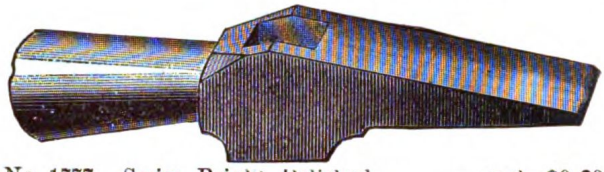
CUTS ARE FULL SIZE.

No. 1771. Swiss, Bright, Polished, each, $0 15
" 1772. Stubs' " " " 35
Nickel-plated, extra..... 15



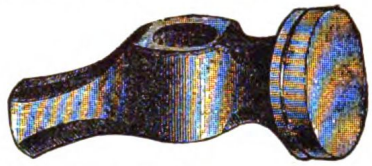
No. 1773. Swiss, Bright, Polished, each, $0 15
" 1774. Stubs' " " " 35
Nickel-plated, extra..... 15

No. 1775. Swiss, Bright Polished.... each, $0 15
" 1776. Stubs' " " .... " 35
Nickel-plated, extra 15

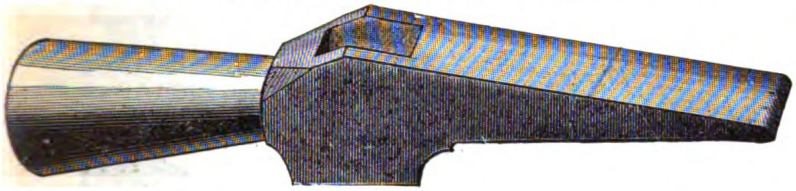


No. 1777. Swiss, Bright, Polished.....each, $0 20
" 1778. Stubs' " " ..... " 45
Nickel-plated, extra..... 15

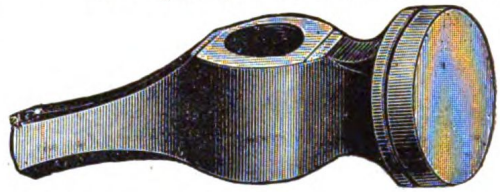
No. 1779. Swiss, Bright, Polished.....each, $0 20
" 1780. Stubs' " " ..... " 45
Nickel-plated, extra 15



No. 1786. Swiss Chasing ..... each, $0 45
" 1787. Stubs' " ..... " 55
Nickel-plated, extra..... 20



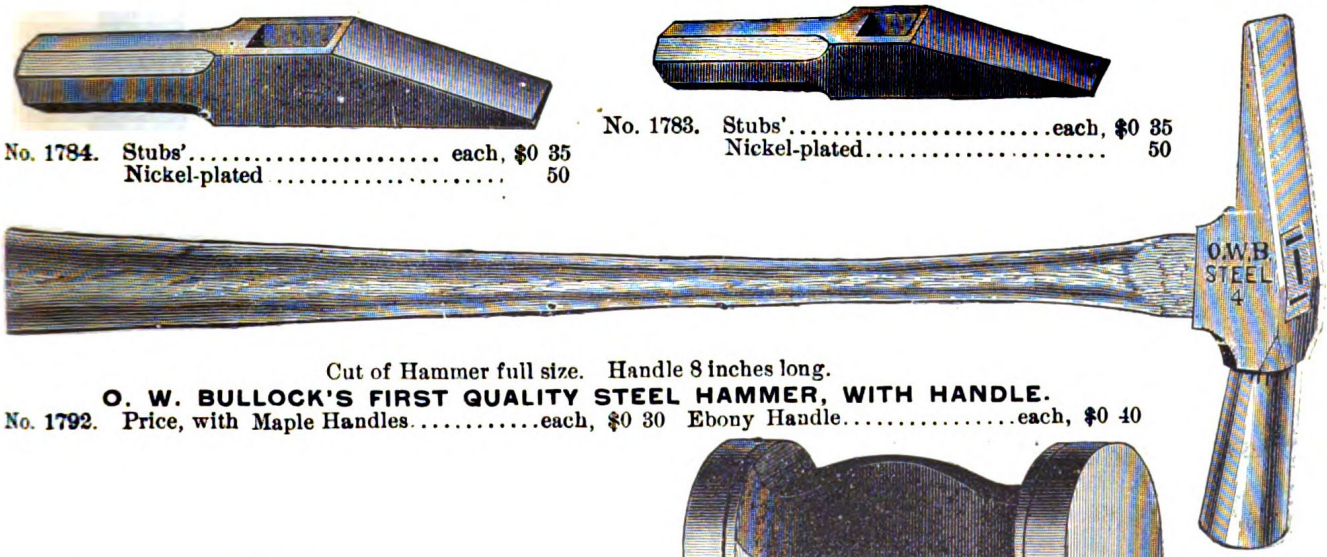
No. 1781. Swiss, Bright, Polished.....each, $0 25
" 1782. Stubs' " " ... . " 55
Nickel-plated, extra..... 20



No. 1788. Swiss Chasing.....each, $0 45
" 1789. Stubs' ..... " 75
Nickel-plated, extra..... 20

No. 1784. Stubs'..... each, $0 35
Nickel-plated 50

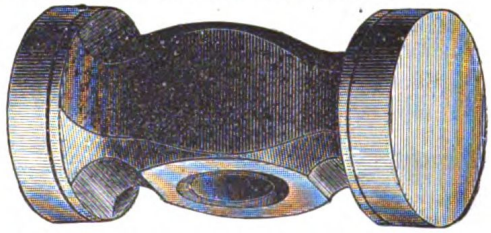
No. 1783. Stubs'.....each, $0 35
Nickel-plated..... 50



Cut of Hammer full size. Handle 8 inches long.

O. W. BULLOCK'S FIRST QUALITY STEEL HAMMER, WITH HANDLE.

No. 1792. Price, with Maple Handles.....each, $0 30 Ebony Handle.....each, $0 40



No. 1790. Stubs'Chasing, each, $0 90 and $1 00
" 1791. O. W. Bullock's Chasing:
1½ in..... 50
1¾ in.... 65
2 in... 85

No. 1785. Stubs'.....each, $0 40
Nickel-plated..... 60

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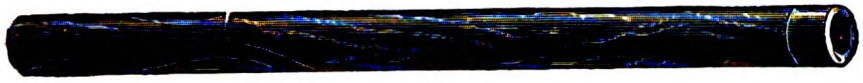
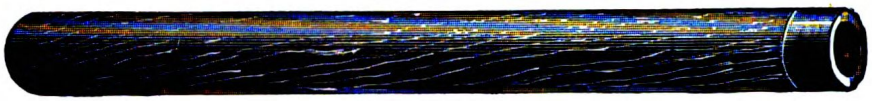
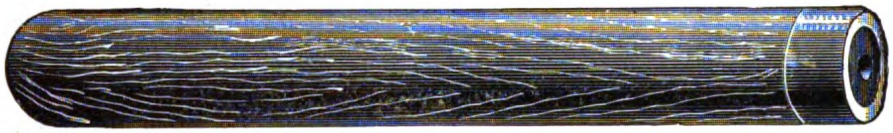
TOOLS H.



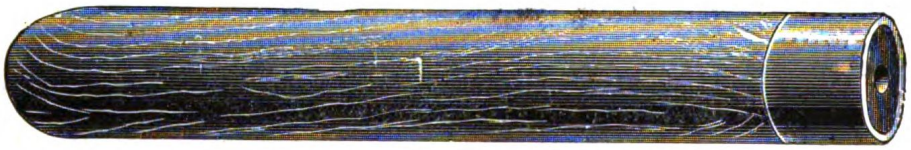
NO. 1793.



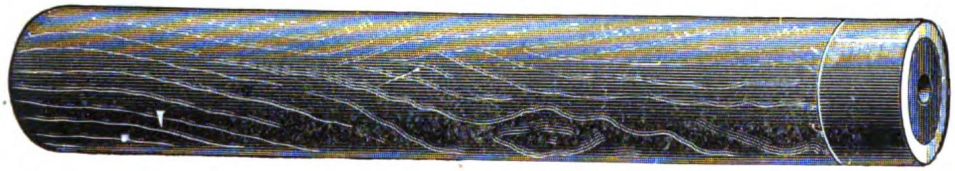
NO. 1794.



NO. 1795.

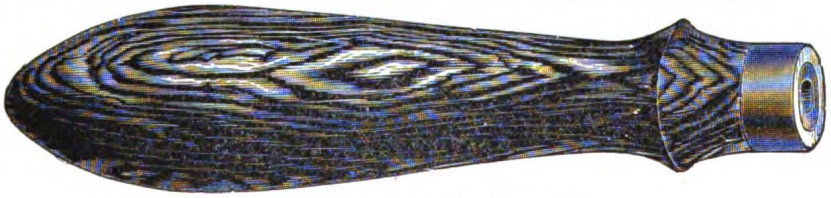


NO. 1796.

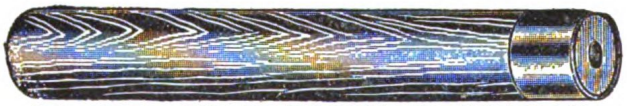


NO. 1797. FILE HANDLES.
Cuts full size.

White Wood, from No. 1793 to No. 1797, assorted.....per doz, $0 30
Ebony, from No. 1793 to No. 1797..... " 50
Rosewood, from No. 1793 to No. 1797..... " 60



NO. 1800. FILE HANDLE.
White Wood.....per doz., $0 30 | Rosewood.....per doz,$0 60



NO. 1798. SHORT ROSEWOOD HANDLES.
Per dozen.....$0 40

NO. 1803. ADJUSTABLE FILE HANDLE.
Each.....$0 45

NO. 1801. ADJUSTABLE FILE HANDLE.
Cut full size.
Each.....$0 10 Per doz.....$1 00
No. 1800. Larger size, each, $0 15; per doz... 1 60

NO. 4331. UNIVERSAL FILE HANDLE.
Price.....each, $0 15
Price.....per dozen, 1 75

NO. 4332. SCREW HEAD FILE HOLDER.
This tool stiffens the file and does away of breaking nicks out of file.
Price.....each, $0 15

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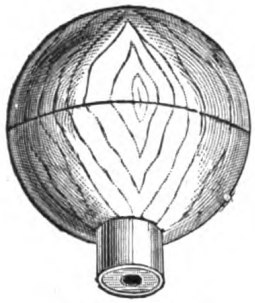
TOOLS H.

NO. 1818.



NO. 1819.

NO. 1820.

NO. 1821.

NO. 1822.

GRAVER HANDLES, CUTS FULL SIZE.

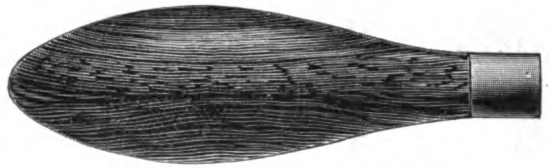
Nos. 1818 to Nos. 1822.	Maple	each,	$0 05.	Per dozen,	$0 30
" 1818 " " 1822.	Rosewood	"	10.	" "	60
" 1818 " " 1822.	Ebony	"	10.	" "	75

NO. 1804.

NO. 1805.

CUTS FULL SIZE.

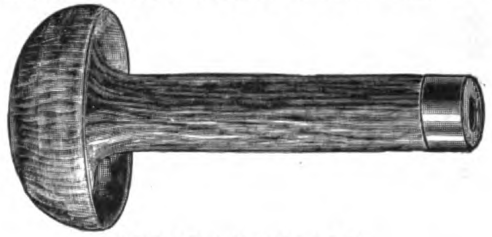
Nos. 1804. 1805.	Maple,	each	$0 05.	Per doz.,	$0 30
" 1804. 1805.	Rosewood,	"	10.	" "	60
" 1804. 1805.	Ebony,	"	10.	" "	75



NO. 1806. FILE HANDLE.

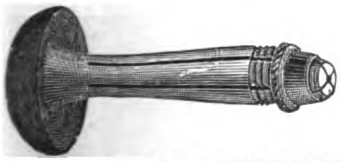
Rosewood.....Each, $0 10. Per dozen, $0 60

Handle No. 1806 is also used as Graver's Handle.



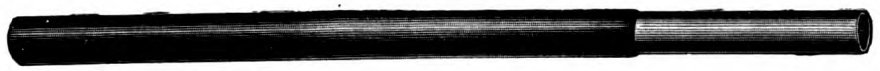
GRAVER HANDLES.

No. 1807.	Maple,	Each,	$0 5.	Per dozen,	$0 30
" 1808.	Rosewood,	"	10.	"	60
" 1809.	Ebony,	"	10.	"	1 00



NO. 1810. ADJUSTABLE GRAVER HANDLE.

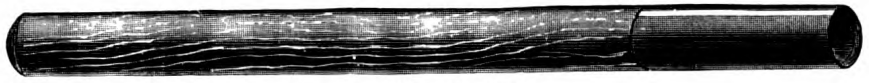
Each.....$0 10



CUT FULL SIZE.

SMALL HOLLOW FILE HANDLE.

No. 1811.	Maple	per dozen,	$0 30
" 1812.	Rosewood	" "	35
" 1813.	Ebony	" "	35



CUT FULL SIZE.

HOLLOW PIVOT FILE HANDLES.

No. 1815.	Maple	per dozen,	$0 30
" 1816.	Ebony	" "	35

NO. 1814.

CUT FULL SIZE.

BROACH OR OILER HANDLE

Per dozen.... .....$0 50

NO. 1817. SCREW HEAD FILE HANDLES.

Each... .....$0 15

FOR GRAVER HANDLE, SEE ALSO PAGE 105.

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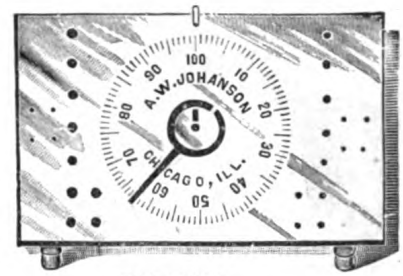
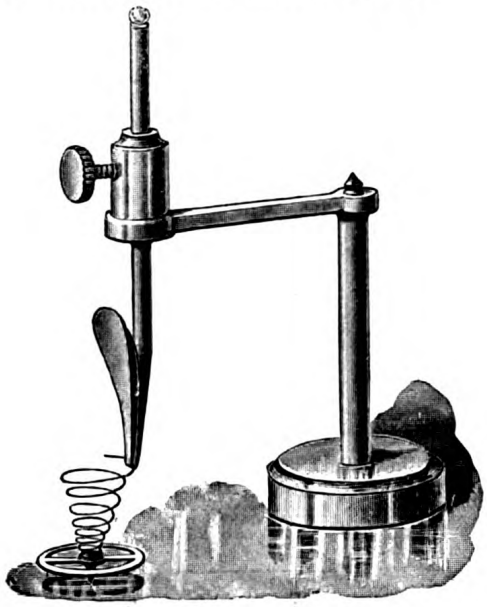
TOOLS H AND I.

NO. 1825½. THE X RAY PALLET JEWEL SETTER.
Directions with each tool.
Price.....$2 00



NO. 1823.
A PERFECT HAIRSPRING INDICATOR FOR ALL AMERICAN WATCHES.

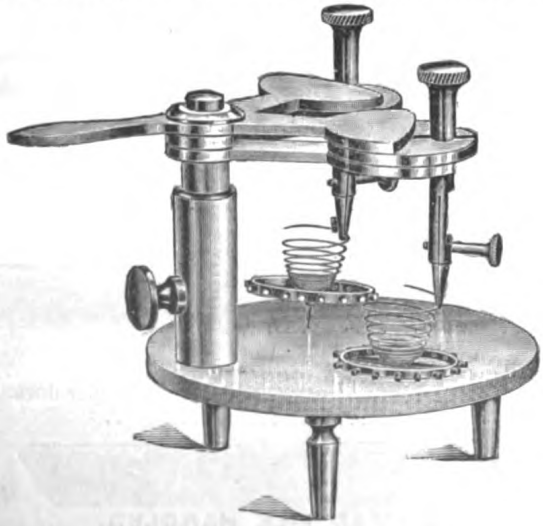
DIRECTION.—In front of fig. 100 is a small spring, push same toward fig. 10. Then place balance-wheel on top of the stand, with staff in center and roller-jewel in the oblong hole, let the spring back gently, the balance-wheel will then take its own position. Set degree hand in front of the desired degree as per direction on index-table, place hairspringstud in front of hand, push on the collet.
Price.....$1 50



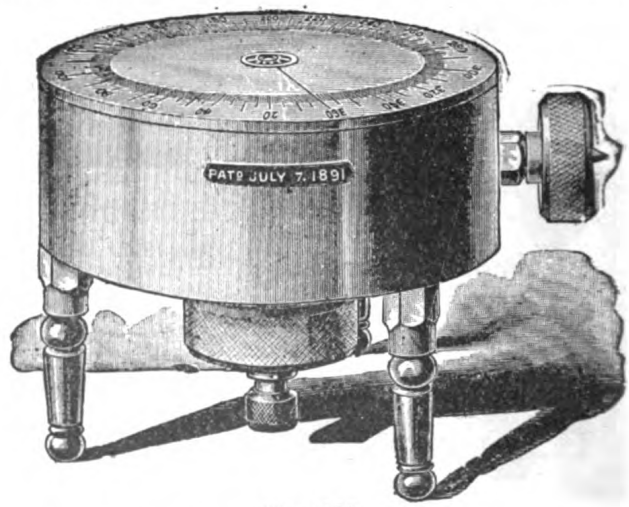
NO. 4338.
HAIR SPRING VIBRATING AND BEAT STAND.

To find correct place for the stud, compare vibrations of hairspring you wish to adjust with the beat of a watch of which the hairspring is correctly adjusted.
Price, Nickel-plated.....$0 85

NO. 1824.
NEFFLEN'S PATENT WATCH-HAND REMOVER.
Price.....$1 10



No. 1826. AUTOMATIC HAIR SPRING VIBRATOR
Price.....$3.00



NO. 1825.
LOUDON'S HAIRSPRING STUD INDEX.

The above tool will accurately locate the hairspring stud or fastening so as to bring the Jewel Pin in line and watch in perfect beat An index book, alphabetically arranged, with over 2,000 locations of American and Foreign watches, accompanies each instrument.
Price, Nickel-plated.....$6 00

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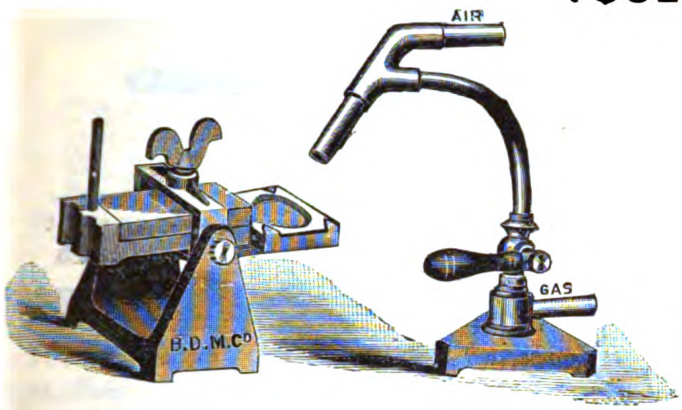
TOOLS T.



NO. 1829. NO. 1830.

MELTING ARRANGEMENT.

With the No. 1830 Blow-Pipe.

No. 1829.	Melting arrangement, with both wire and plate moulds	each,	$3 25
" 1830.	Blow-pipe	"	2 25
" 1834.	Wire Moulds	"	1 25
" 1835.	Plate Moulds	"	1 25
" 1836.	Extra Carbon Crucibles, without slides for No. 1829	per doz.,	1 00
" 1838.	Extra Carbon Crucibles, with slides for No. 1829	per doz.,	1 75

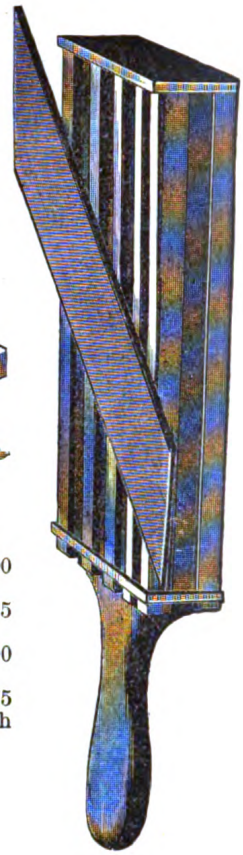
No flux should be used with the Carbon crucibles.

NO. 1839.

NEW MELTING ARRANGEMENT.

No. 1839.	Melting Arrangement	$3 00
" 1840.	Ingot Mould, if ordered separately	1 25
" 1841.	Extra carbon crucibles without slides, per doz.	1 00
" 1842.	Extra carbon crucibles with slides, per doz.	1 75

The No. 232 Blower should be used with Melting Arrangement



INGOT.

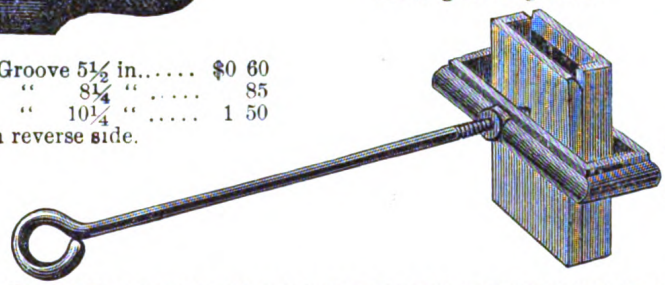
No. 1848.	With 3 Grooves, length of Groove $5\frac{1}{2}$ in.		$0 60
" 1849.	" " " " $8\frac{1}{4}$ "		85
" 1850.	" " " " $10\frac{1}{4}$ "		1 50

Large half-round groove on reverse side.

INGOT.

No. 1845.	For 3 Grooves,		$2 00
1846.	" 4	"	2 40
1847.	" 6	"	2 75

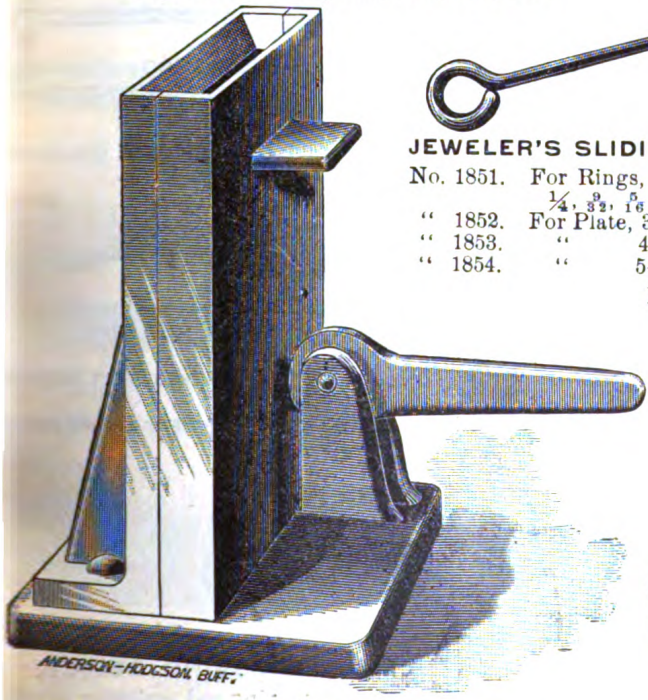
The Grooves are planed.



JEWELER'S SLIDING INGOT WITH SCREW HANDLE.

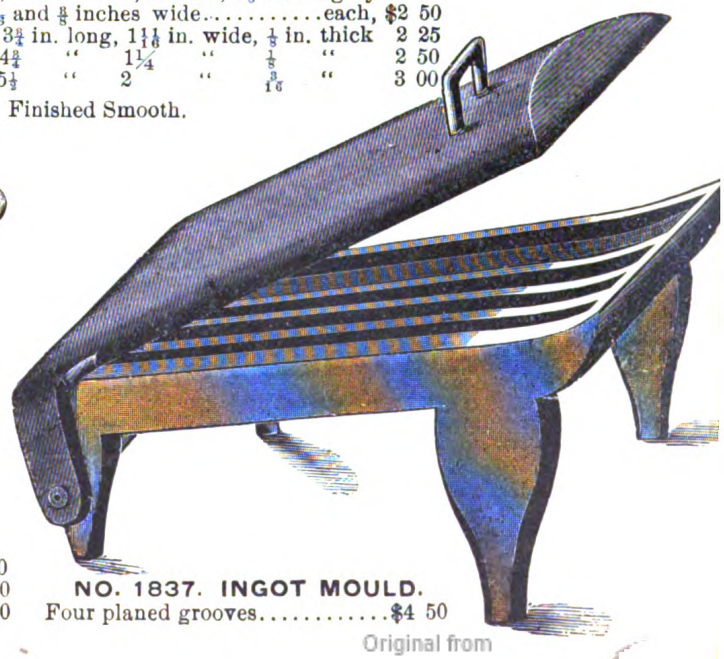
No. 1851.	For Rings, Half-round, 4 Sizes, $4\frac{7}{8}$ in. long by $\frac{1}{4}$, $\frac{9}{32}$, $\frac{5}{16}$ and $\frac{3}{8}$ inches wide					each,	$2 50
" 1852.	For Plate, $3\frac{3}{4}$ in. long, $1\frac{11}{16}$ in. wide, $\frac{1}{8}$ in. thick						2 25
" 1853.	"	$4\frac{3}{4}$	"	$1\frac{1}{4}$	" $\frac{1}{8}$	"	2 50
" 1854.	"	$5\frac{1}{2}$	"	2	" $\frac{3}{16}$	"	3 00

Finished Smooth.



UPRIGHT SLIDING INGOTS.

No. 1831.	3 in. high	$2\frac{3}{4}$ in. wide,	$\frac{1}{8}$ & $\frac{3}{16}$ in. thick			$2 00
" 1832.	$4\frac{1}{2}$ "	$2\frac{3}{4}$ "	$\frac{1}{8}$, $\frac{3}{16}$ & $\frac{1}{4}$ "			2 50
" 1833.	6 "	$2\frac{3}{4}$ "	$\frac{1}{8}$, $\frac{3}{16}$ & $\frac{1}{4}$ "			3 00



NO. 1837. INGOT MOULD.

Four planed grooves.....$4 50

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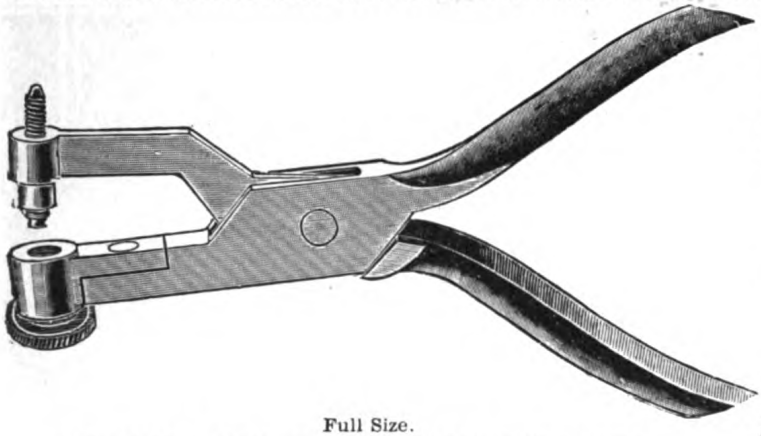
TOOLS J.

Full Size.

NO. 1857. JEWEL PALLET STONE ADJUSTER.

A very handy tool for holding Pallets, and protecting them from heat while heating cement, in order to adjust stones.

Price.....$0 50



Full Size.

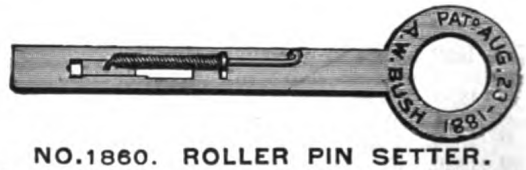
NO. 1859. NEW STYLE JEWEL EXTRACTOR.

A very handy tool for extracting jewels from all kinks of movements. The lower knob, as shown in cut, can be raised or lowered to suit the operator.

Price.....each, $1 25

NO. 1858. ACME ROLLER PIN SETTER.

Nickel-plated.....each, $0 65

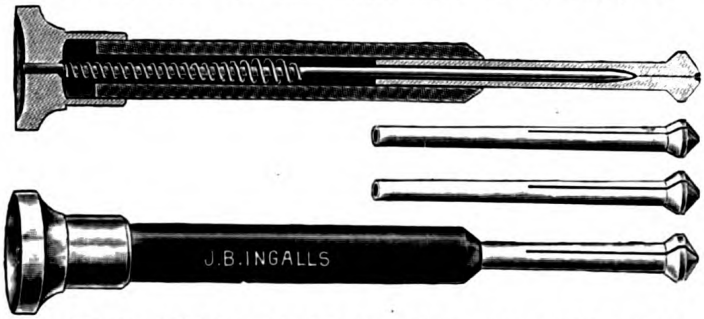


NO. 1860. ROLLER PIN SETTER.

Nickel-plated.....each, $0 25

NO. 1861. HALL'S RUBY PIN SETTING TOOL.

Price.....each, $0 75



NO. 1862. INGALL'S JEWEL SETTING POLISHER.

The above cut represents a tool for polishing the jewel settings in all grades and sizes of watches. It has hollow rubber handle, capped by movable finger rest. The pressure on top naturally necessary to hold tool when in use spreads the tips to fill every part of setting and almost instantly polishes a tarnished setting like new. This tool complete, with three sizes polishers.....$1 00

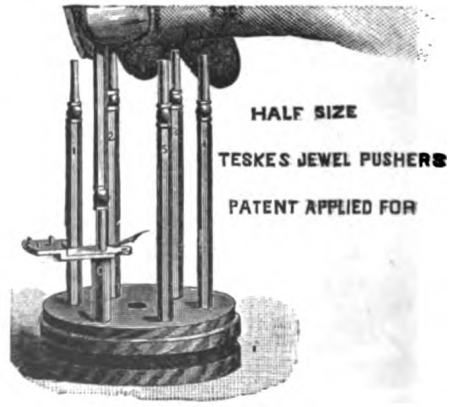
NO. 1863. NEW STYLE JEWEL BEZEL OPENER.

This tool has 4 different size heads for small and large settings.

Per set.....$0 65

NO. 1864. JEWEL PIN SETTER.

Price.....each, $0 75



NO. 1866. JEWEL PRESSING DEVICE.

For safely removing and replacing Jewels to Brass Settings.

Price.....$0 75

FULL SIZE.

NO. 1865. PATENT COMBINED JEWEL PIN AND PATENT SETTER.

With full directions in each box.....price, $0 50

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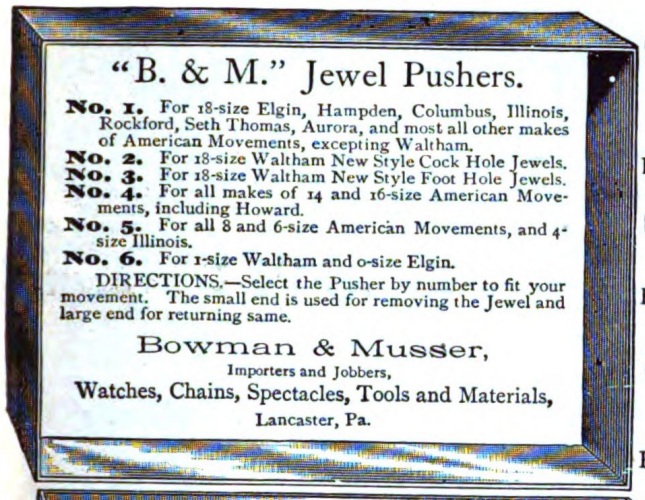
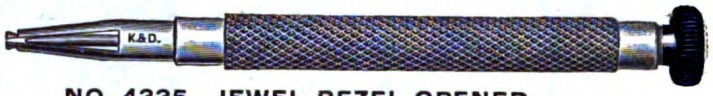
TOOLS J.



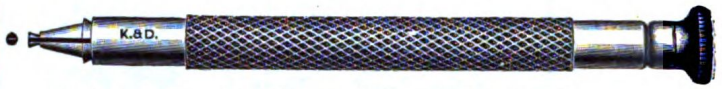
NO. 4334. TIDD'S COMBINATION JEWEL HOLDER AND RUBY PIN SETTER.

Price.....each, $0 25



NO. 4335. JEWEL BEZEL OPENER.

Price.....each, $0 65

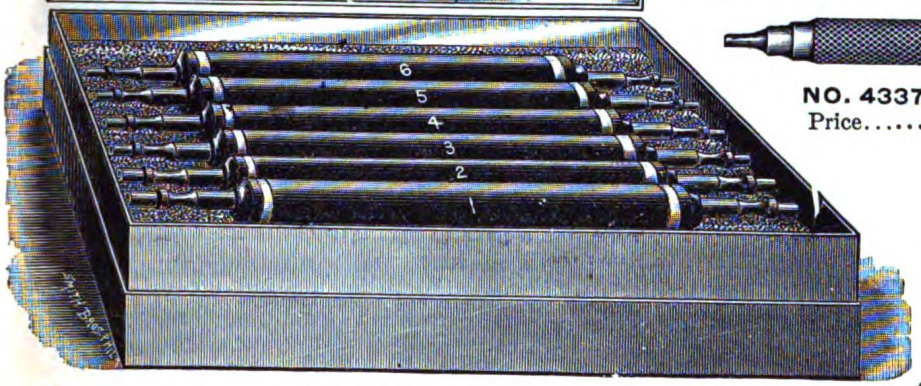


NO. 4336. JEWEL BEZEL OPENER.

Price.....each, $0 75

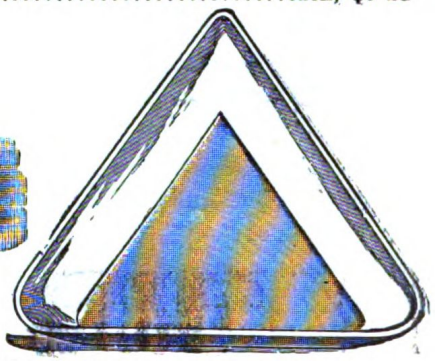
NO. 4337. JEWEL PUSHER.

Price.....each, $0 25



NO. 1874. LANCASTER JEWEL PUSHERS.

No. 1874. German Silver and Ivory Ferrules.....per set, $2 25
No. 1875. Imitation, cheaper grade..... " 1 50



TRIANGULAR JEWEL CUP.

No. 1867. Glass .....each, $0 25
" 1868. Horn ..... " 25

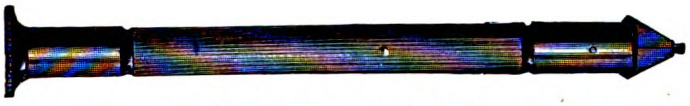
NO. 1876. NEW STYLE JEWEL BEZEL OPENER AND CLOSER.

Price, Nickel-Plated $0 75

JEWEL BEZEL OPENER.

Above come in four sizes—Nos. 1, 2, 3, 4. No. 1 is suitable for the smallest balance-jewel settings, while No. 4 will answer for opening large plate jewel bessel.

No. 1869..... each, $0 50
" 1870. Per Set of 3..... 1 50



NO. 1877. IMPROVED JEWEL SETTING OPENER.

Price $0 75

JEWEL BEZEL CLOSER.

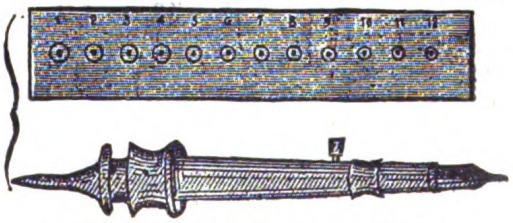
No. 1871. Price, Set of 3 .....$1 00
" 1872. " " 3 in Box..... 1 25

NO. 1878. CUNNINGHAM'S WATCH-JEWEL HOLDER.

Made in German Silver.

Price $0 50

Full directions with each Holder.



NO. 1873. JEWELING TOOL.

In Morocco Box.....$1 10

A Tool for Cutting Jewel Settings.

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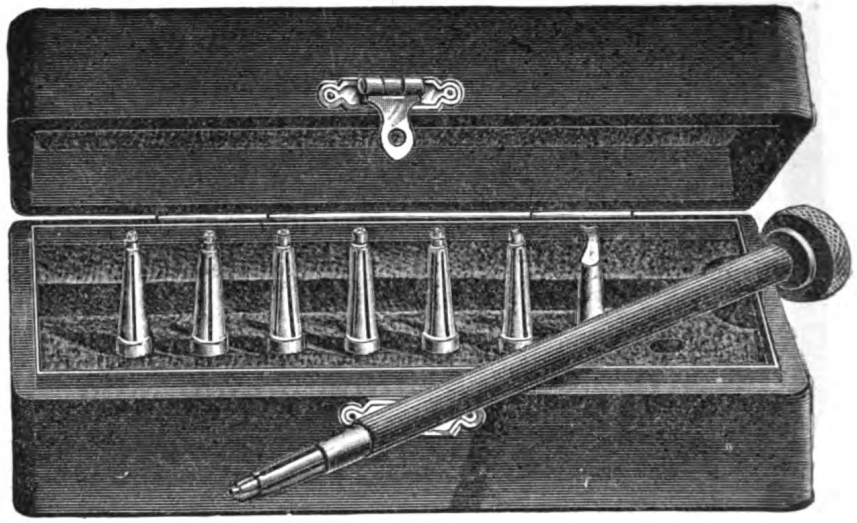
TOOLS J.

NO. 4338.
BEACH'S RUBY PIN SETTER.

You can not do without this tool for setting the roller jewel. There is nothing in the market its equal. With it you can not make a mistake placing the jewel in the proper position. Directions with each tool.

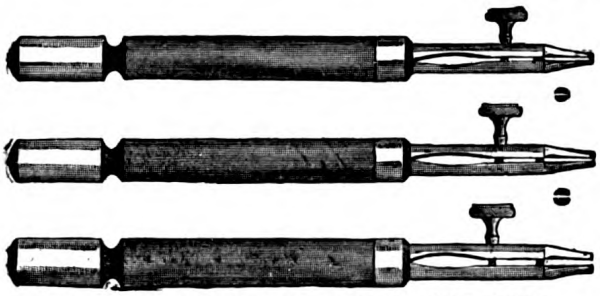
Price.... .....$1 00



NO. 4339. JEWEL BEZEL OPENER AND CLOSER.

The heads of this tool are split in quarters, and, when opened, form a perfect circle, being superior to any tools which are cut straight across, and when opened form an oval. The tool consists of four setting openers, three setting closers and one cutter for removing burs.

Price, complete as shown above.....$1 50



DAUSCH'S JEWEL BEZEL OPENERS.

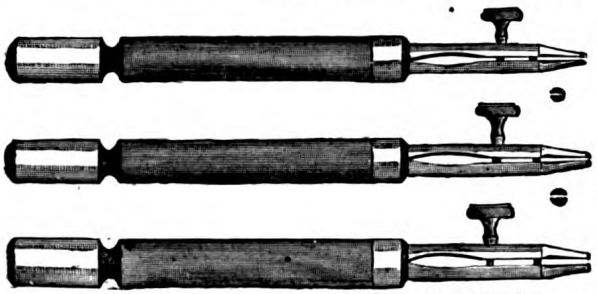
No. 4340. Set of 3.....$1 25
" 4341. " 3 in Morocco Case..... 1 50

NO. 4346. JEWEL BEZEL CLOSERS.

Price, per set of 3.....$1 00

NO. 4347.
JEWEL BEZEL OPENER AND BURNISHER.

Price, with hand-formed points..... .....$0 75



DAUSCH'S JEWEL BEZEL CLOSERS.

No. 4342. Set of 3 .....$1 25
" 4343. " 3 in Morocco Case..... 1 50

The above tools are without a doubt the best ever offered for the purpose and will please you.

NO. 4348.
JEWEL BEZEL OPENER AND BURNISHER.

Price.....$0 75

Will fit all sizes of jewel holes.

NO. 4349. NEW STYLE RUBY PIN-SETTER.

Price..... ..... each, $0 25

SCHWERTER'S JEWEL BEZEL OPENER.

No. 4344. Price $0 50
" 4345. In sets of 4 ..... 1 50

NO. 4350. JEWEL PUSHER. BRASS ENDS. COUNTERSUNK.

Price, Nickel-plated $0 25
" Plain..... 15

NO. 4351. HARDINGE NEW JEWEL BURNISHER.

Nicely Finished, Nickel-plated. Price..... .....each, $0 50

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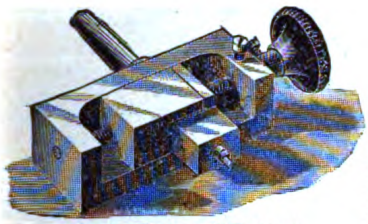
TOOLS J.

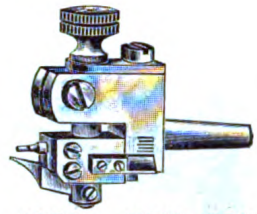


Josh Thomas' Patent.

No. 1879. THOMAS' NEW STYLE JEWELING TOOL.

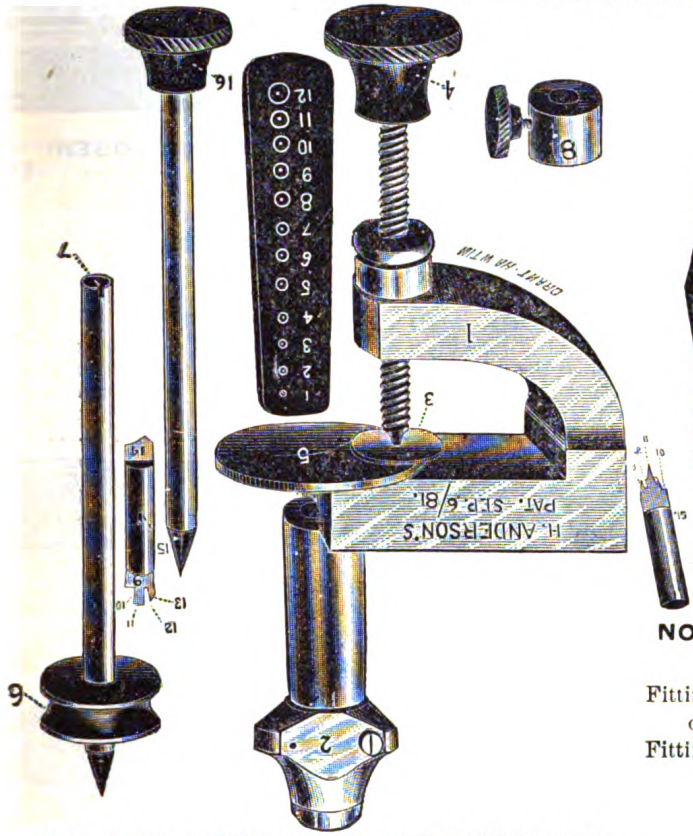
It is made almost entirely of steel, and from its peculiar construction, takes up its own wear. It cuts with accuracy a recess for any size jewel to be set. It fits any lathe and is always ready for instant use. With it the finest jeweling can be accomplished with ease. It can also be used as a countersinker for screw heads. It will burnish jewel without removing tool from lathe.

No. 1879. Plain $5 00
No. 1880. Nickel plated 5 50



NO. 4352. NEW STYLE JEWELING TOOL.

Fits in tail-stock spindle.
Made for Moseley, Webster-Whitcomb and Geneva lathes.
Price $4 50



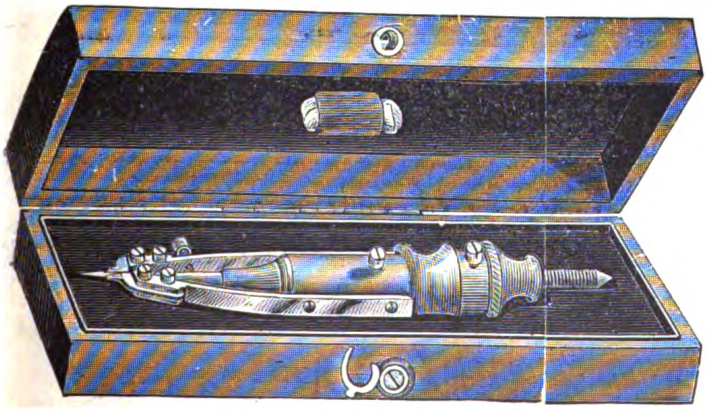
NO. 1881. ANDERSON'S JEWELING TOOL.

Price $5 00

NO. 1882. ANDERSON'S JEWELING CUTTERS,

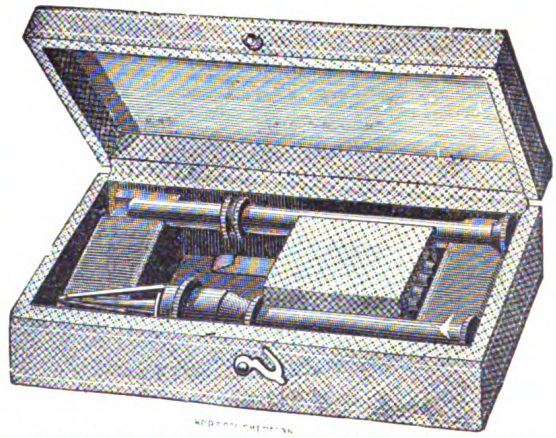
For Use in American Lathe.

Fitting in Split Chuck No. 38 of American Lathes, per set of 12 ..... $3 00
Fitting in Split Chuck No. 38 of American Lathes....each, 0 35



NEW STYLE JEWELING TOOL.

No. 1885. Price $2 00



CROSBY'S PATENT JEWELING TOOL.

No. 1883 ..... $1 25
Extra quality finish 1 60
" 1884. Jewel Diamond Broaches, per set of 4 ..... 0 40

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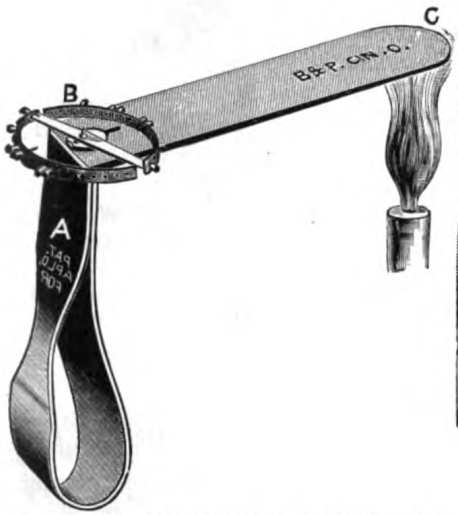
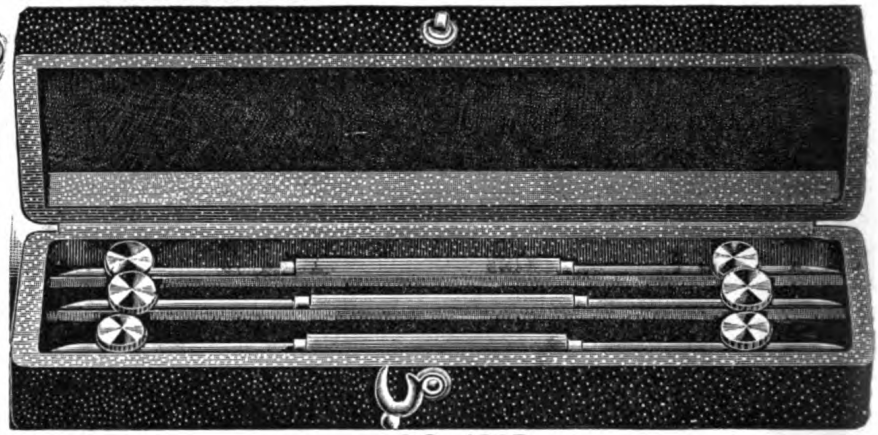
TOOLS K.



NO. 1886. PERFECT JEWEL PIN SETTER.

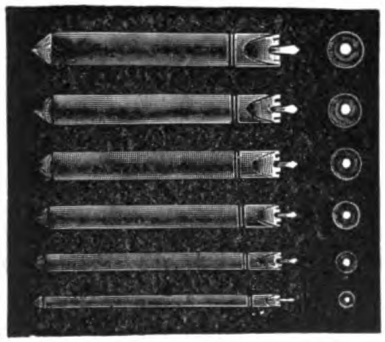
No table to take off; no hairspring to remove; no jewels lost.
Price.....each, $0 15



NO. 1887.
NEW STYLE JEWEL BEZEL OPENER AND CLOSER.
Set of 3 in morocco case.....$1 50

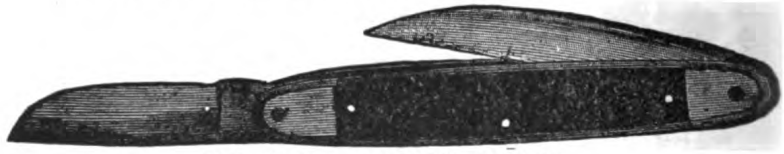
NO. 4353.
IDE'S FORK AND JEWEL PIN GAUGE.

With this useful little tool the exact size of fork slot is gauged without taking down watch, at the same time the gauge opens the proper size for Ruby Pin required, making proper allowance for shake. An indispensable tool. Send for one on trial.
Price.....$1 50



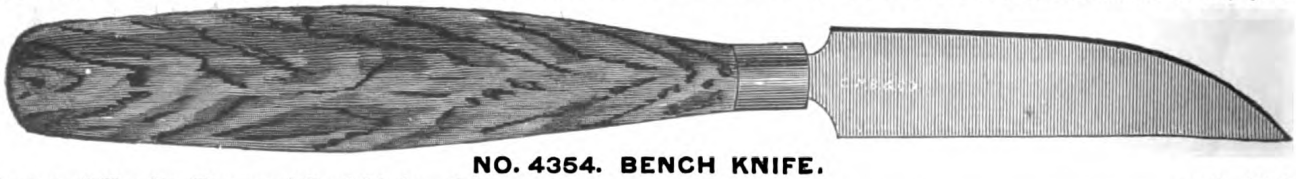
JEWEL BEZEL CUTTERS.
No. 1891. Per set of 6.....$1 50
To fit in Tailstock of Lathe.
No. 1892. Per set of 6 .....$2 00
In ordering state size of Lathe, or send Taper of Tailstock.

BENCH KNIFE.
No. 1888.....$0 20
Best quality..... 30



NO. 1889. BENCH KNIFE.
Combined with German Silver Case Opener.....each, $0 25

NO. 1890. BENCH KNIFE.
Rosewood Handle, Tempered Steel Blade. Price.....each, $0 25



NO. 4354. BENCH KNIFE.
Rosewood Handle, Tempered Steel Blade. Price.....each, $0 30

NO. 4355. HANDY BENCH KNIFE.
Razor Temper, made from one piece of steel, handle wound. Price.....each, $0 15

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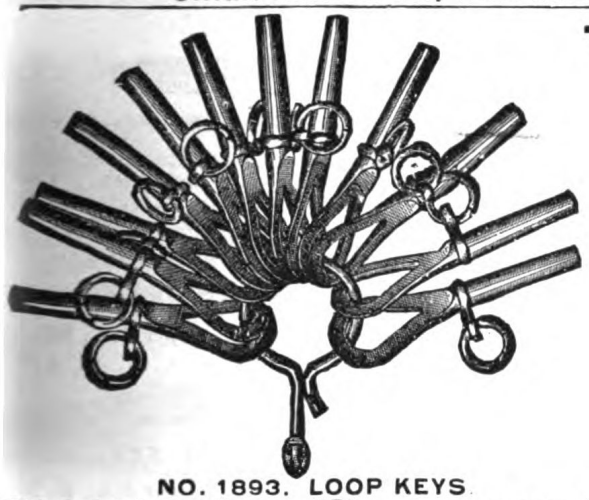
TOOLS K.



NO. 1893. LOOP KEYS
Nickel-plated, Fine Tempered Pipe.....per gross, $2 00

NO. 1894. Nickel-pl. (The best Steel Key made), per gr. $1 25

NO. 1895. KEY.
Common....per gross, $0 75
Best Steel Tempered, doz. 10
" " " gross, 90

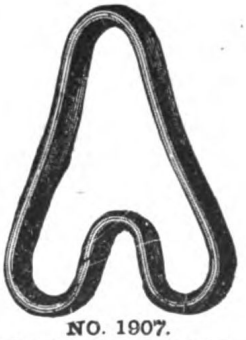
NO. 1896. KEY.
Steel Pipe, Gilt Top.
Per gross.....$1 25

NO. 1897. STYLE C.
Watch Key.
Per gross.....$6 00

NO. 1898. STYLE A.
Name Key.
Per gross.....$9 50

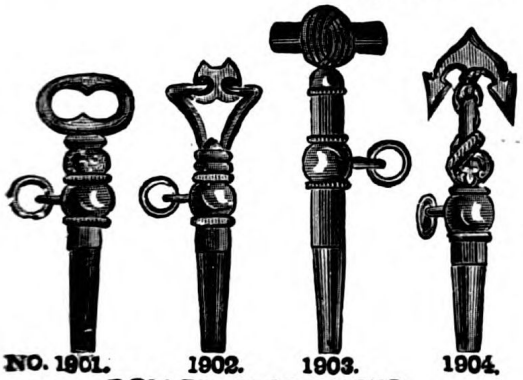
NO. 1905.
KEY RING.
Per doz.....$0 10
Per gross..... 50

NO. 1906.
KEY RING.
Per doz.....$0 20
Per gross..... 1 50



NO. 1907.
STEEL KEY RING.
Per doz.....$0 50

SECURITY PUZZLE RING.
(Partially open.)
2 sizes.
No. 1899, No. 4...doz. $0 75
" 1900, " 5... " 1 00



NO. 1901. Per doz. $7 50 — **1902.** Per doz. $9 00 — **1903.** Coral Bar. Per doz. $12 00 — **1904.** Per doz. $9 00
ROLLED PLATE KEYS.

STAR KEY.
No. 1908.....per doz. $0 40

NO. 1909.
EAR SPOON AND TWEEZER KEY.
Nickel-plated.....per doz. $1 00

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TOOLS K.

NO. 1930. IVORY BENCH KEY.

Price, sets of 4.....$0 65 Price, sets of 6.....$0 90

No. 1931. HEXAGON, NICKEL-PLATED.

Price, sets of 3..... .. ....$1 10 Price, sets of 4.....$1 45

DUST PROOF BENCH KEY.

Nickel-Plated.

No. 1932. Price, sets of 3.....$0 75

No. 1933. Sets of 4.....$1 00 No. 1934. Sets of 6..... $1 50

NO. 1910. BIRCH'S NEW PATENT BENCH KEY.

Price, Nickel-plated.....each, $0 35

STEM OR KEY-WIND KEY AND CASE OPENER COMBINED.

Cut shows both styles, Key or Stem Wind.

No. 1911. Price, stem wind..... ....each, $0 30

" 1912. " key " .... " 30

ACME COMBINATION STEM WIND BENCH KEY.

No. 1913. Price, Steel, Nickel-plated.. ... .each, $0 50

NEW CELLULOID HANDLE BENCH KEYS.

Key Wind, in sets of 3, 4 and 6, Variegated Colors

No. 1914. Price, set of 3..... .....per set, $1 25

" 1915. " " 4..... " 1 65

" 1916. " " 6. . ..... " 2 50

NO. 1917. DOUBLE END CELLULOID STEM WIND BENCH KEY.

Variegated Colors.

Price..... .....each, $0 40

NO. 1918. LONG RUBBER HANDLE BENCH KEY.

Price, Nickel-plated..... .....each, $0 35

POCKET KEY.

No. 1919. Brass .....per doz., $0 75

" 1920. " extra quality and finish.. 1 00

Imported..... 60

NO. 1921. POCKET KEY.

Nickel-plated.. .....per doz., $1 25

Imitation. ..... " 1 00

NO. 1922. POCKET KEY.

Hexagon, Nickel-plated.....per doz., $2 00

NO. 1923. SHORT NICKEL PLATED KEY.

For Bench or Pocket Use.

Price..... each, $0 30

NO. 1924. POCKET KEY.

Heavy Rolled Gold Plated.....each, $0 65

Per dozen..... 6 00

NO. 1925. POCKET KEY.

Celluloid, Gold Plated Mountings.

Price..... .....each, $0 80

Per dozen..... 9 00

NO. 1926. GEM KEY.

Price, Nickel-plated.....per dozen, $0 60

S. W. BENCH KEY.

		Each.
No. 1927.	Price, Ebony Handle.....	$0 20
" 1928.	" Extra Finish Eb. Handle	25

NO. 1929. SHORT RUBBER HANDLE BENCH KEY.

Price, Nickel-plated.....each, $0 35

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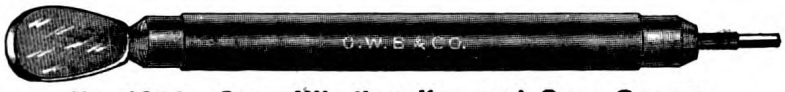
TOOLS K.



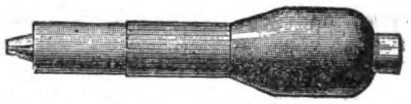
No. 4356. Stem-Winding Key and Case Opener.
0, 6, 16 or 18 Size, Nickel.....Each, $0 35

No. 1947. Key and Stem-Wind Rubber Handle Bench Key.
Price.....Each, $0 25

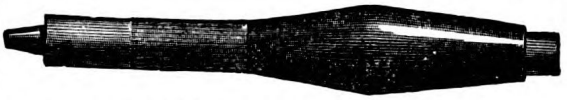
No. 1945. BIRCH BENCH KEY.
Price, Ebony Handle.....Each, $0 30

No. 4357. Nickel-Plated Combination Bench Key.
Price.....Each, $0 40

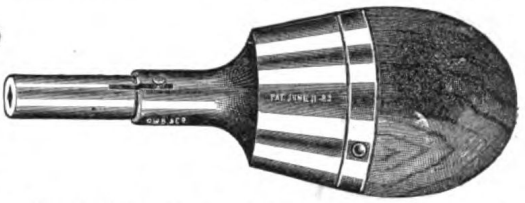
No. 4358. Combination Celluloid Key and Stem-Wind Bench Key.
Price.....Each, $0 60



No. 1937. BIRCH BENCH KEY.
Price.....Each, $0 25



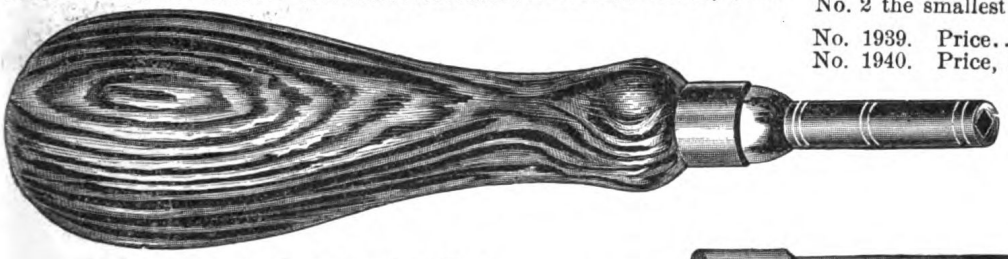
No. 1938. BIRCH BENCH KEY.
Price.....Each, $0 25



BUCK'S PAT. SAFETY CLOCK KEY.

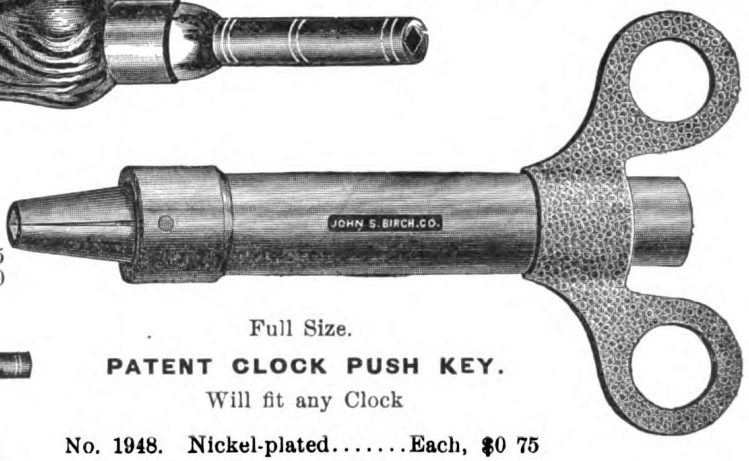
With friction clutch for letting down mainspring slowly and safely. Hold the key so as to press the top into the socket, and by varying the pressure the spring can be controlled. It can be used as a ratchet key also. Two sizes, 2 and 3, No. 2 the smallest.

No. 1939. Price.....Each, $1 00
No. 1940. Price, set of two..... 2 00



STEEL BENCH CLOCK KEY.

No. 1935. Rosewood Handle. (Nos. 1, 2, 3 and 4)..... Each, $0 25
No. 1936. Sets of 4 (No. 1 is the smallest).... 1 00

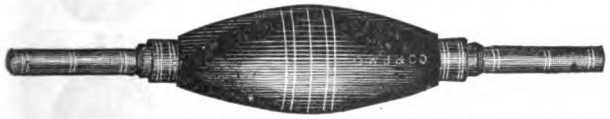


Full Size.

PATENT CLOCK PUSH KEY.

Will fit any Clock

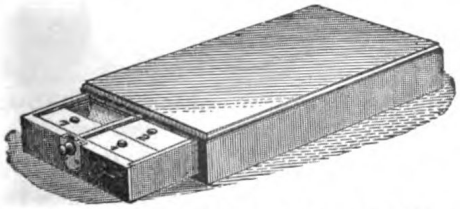
No. 1948. Nickel-plated.....Each, $0 75



No. 1941. DOUBLE END CLOCK KEY.
Cut ½ Size. Length 6 inches.

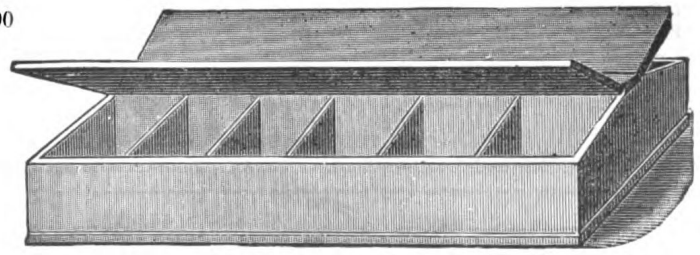
Put up in sets of two. (Nos. 1 and 4, 2 and 3). Rosewood Handle, with steel-tempered pipe.

No. 1941. Each..$ 0 45 No. 1942. Set of two, $0 90



FOWLER'S PATENT KEY BOX.

No. 1943. Price.....Each, $2 00



MANSARD KEY BOX.

No. 1944. Price.....Each, $0 85

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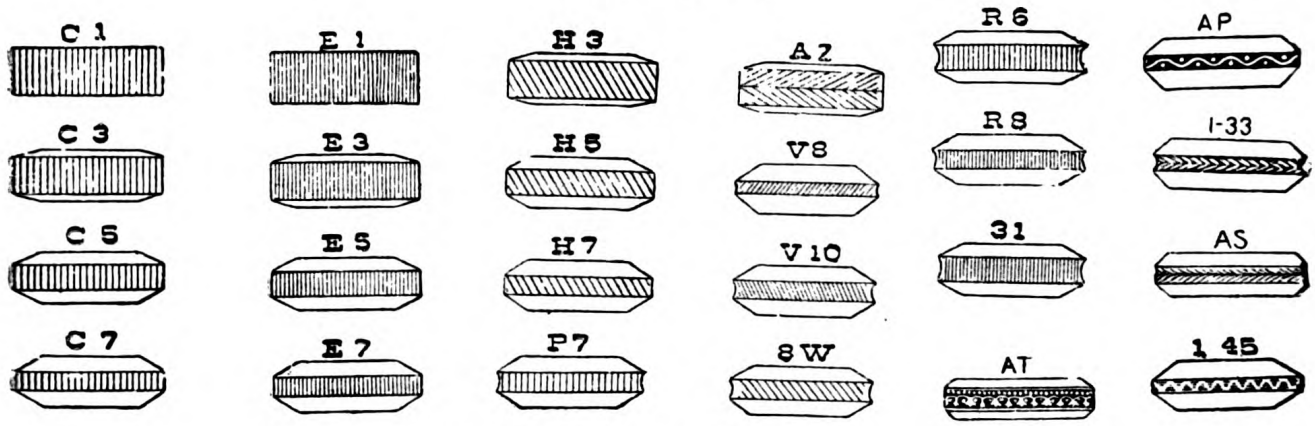
TOOLS K.



KNURLS OR MILLING WHEELS.

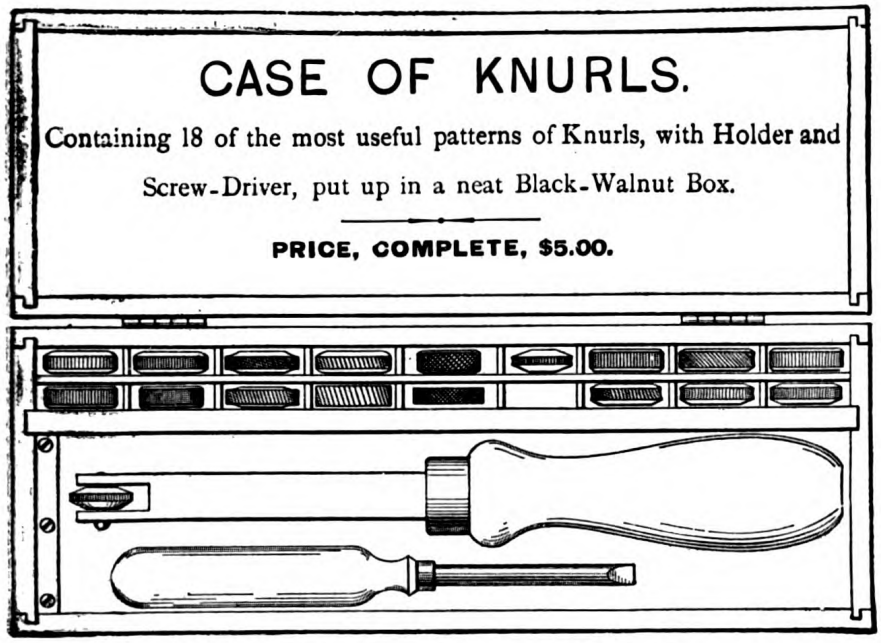
(Cuts are exact size.)

Knurls, American make ..... each, $0 30 per doz. $3 00

NO. 1950. UNIVERSAL KNURL HANDLE.

For Milling Wheels (adjustable).

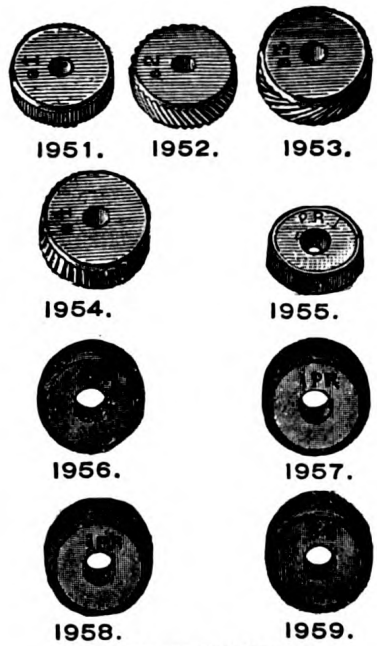
Price $0 50



O. 1960. KNURLS AND HANDLE.

Complete, put up in box as shown above, box 9x3.

Price $5 00



Cuts are Full Size.

KNURLS.

Straight Cut, Beaded and Fancy Patterns. Imported.

Price ..... each, $0 20

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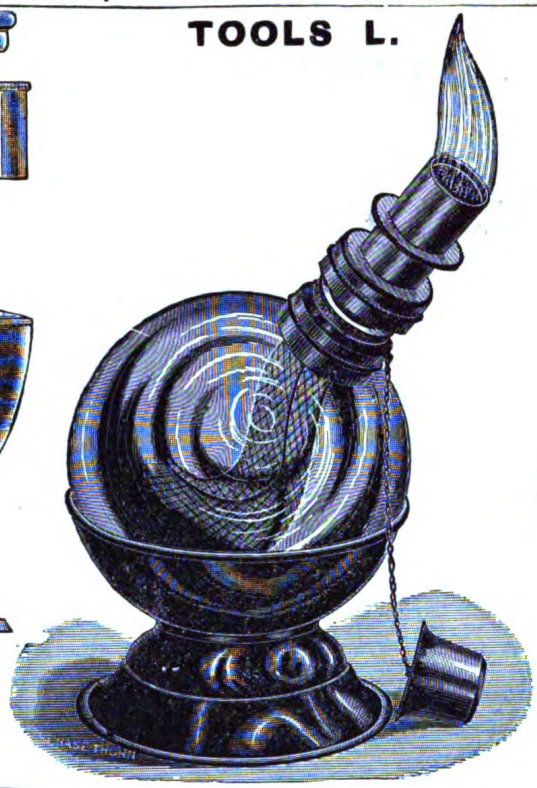
TOOLS L.

ALCOHOL LAMP.

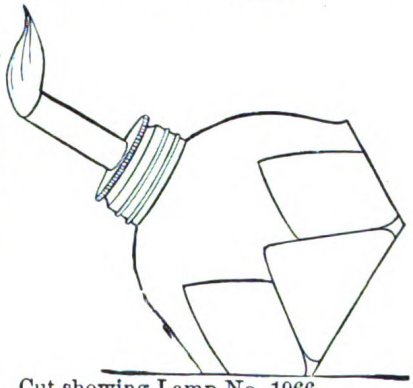
No. 1961. Brass, with Bluing Attachments . $0 60
Nickel-plated..... 85



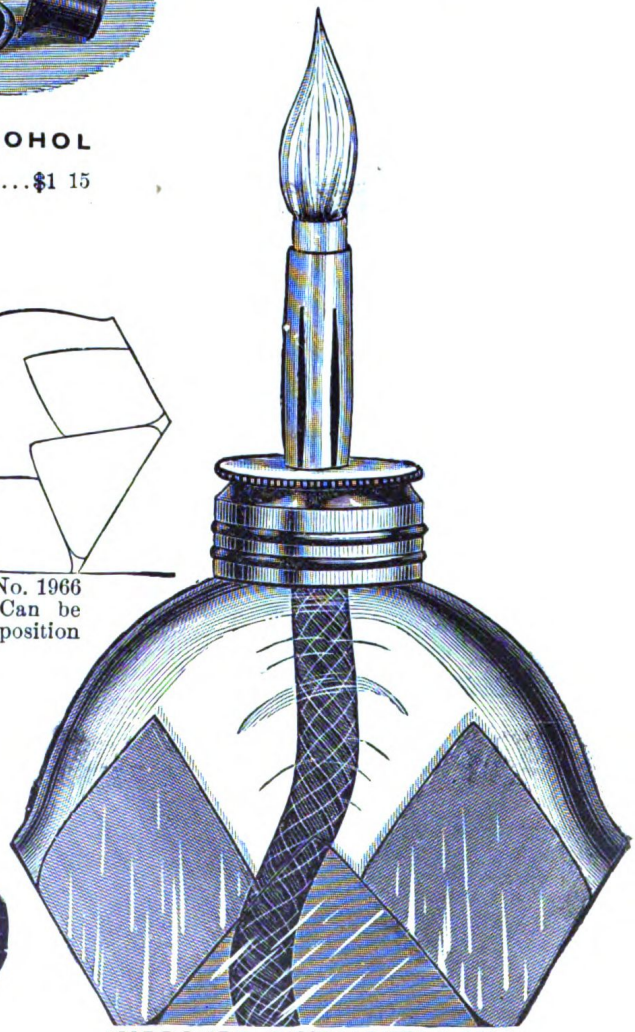
NO. 1964.
SPHERICAL ALCOHOL LAMP.
Large.....$1 15

NO. 1965.
SPHERICAL ALCOHOL LAMP.
Small $0 55

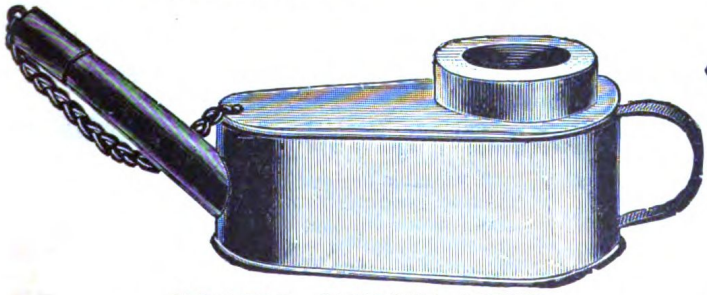
(Cut is two-thirds size.)
NO. 1962. BRASS LAMP.
Small, $0 50; Medium, $0 60; Large, $0 80:
Nickel-plated, extra, 25c.



Cut showing Lamp No. 1966 laying on side. Can be placed in any position required.



IMPROVED SIMPLICITY LAMP.
No. 1966 Small .....$0 50 — No. 1967 Medium ....$0 60 — No. 1968 Large.....$0 70



NO. 1963. ALCOHOL LAMP.
No. 1963. Tin, $0 20 Brass....$0 30 Nickel-pl. $0 55 $0 55

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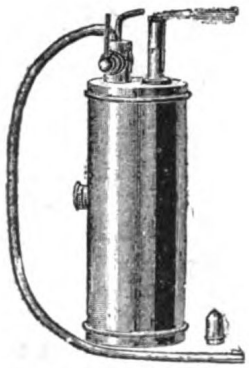
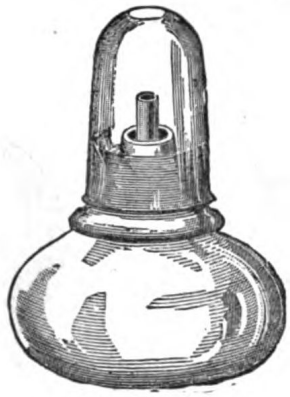
TOOLS L.



NO. 1987.
GASOLINE BLOW-PIPE LAMP.

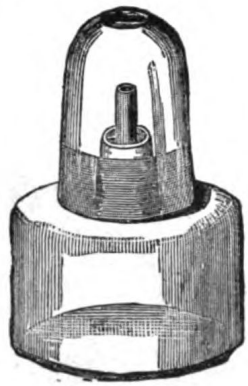
For jewelers, electricians, dentists, etc. Ready for instant use. The flame can be regulated to any size.

Price, Brass...each, $3 50
" Nickel-plated, 3 75



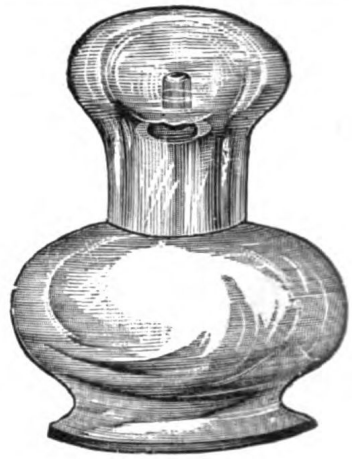
NO. 1976.
GLASS ALCOHOL LAMP.

Medium.....each, $0 30
Large..... " 35



NO. 1973.
GLASS ALCOHOL LAMP.

Price.....each, $0 30



Cut ¾ size.
NO. 1974.
GLASS ALCOHOL LAMP.

Medium..... each, $0 30
Large..... " 35

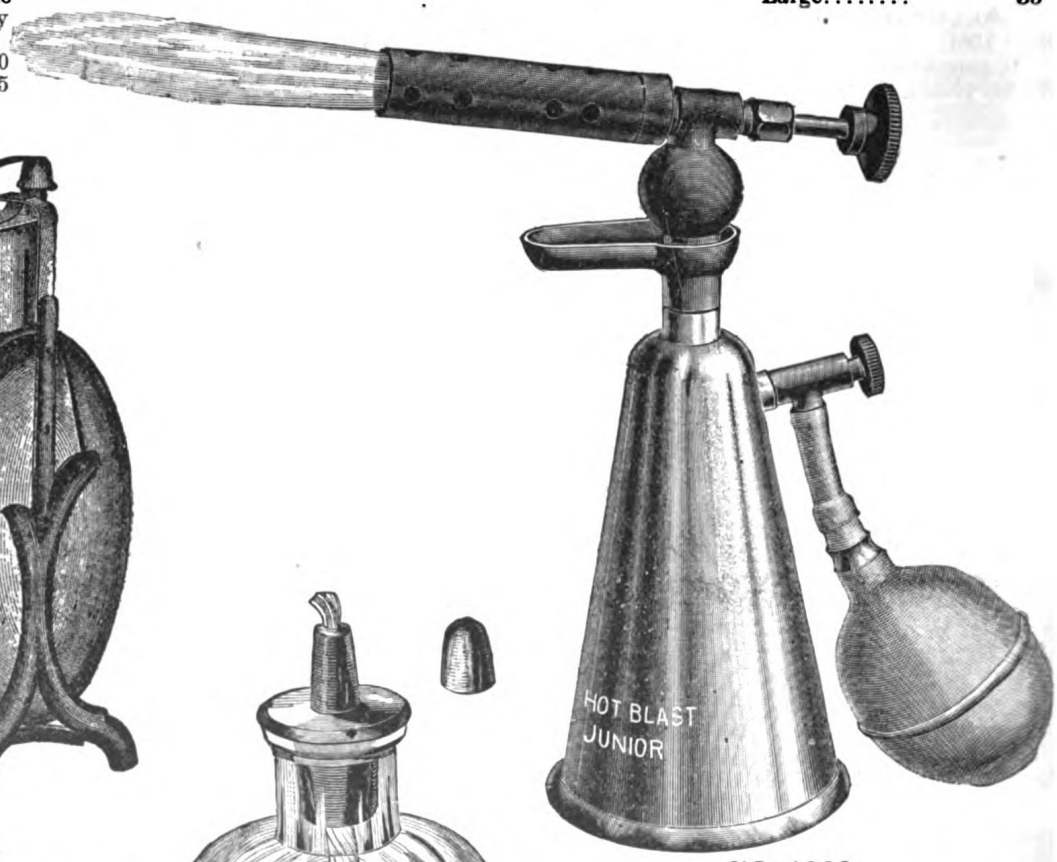
Cut is ½ size.
NO. 1977.
COOPER'S PATENT NICKEL-PLATED ALCOHOL LAMP.

This lamp consists of a reservoir pivoted in a supporting frame, and provided with two wick tubes, combining a large and small one as desired, an extinguisher secured to a spring support which covers the large wick tube when in a vertical position, and an independent extinguisher for the small wick tube. Also a novel device for projecting the wick from the large tube as the reservoir is moved out of a vertical position. The frame is made of iron and bronzed. The reservoir and other parts are made of brass and nickel-plated.

Price..... each, $0 85

NO. 1975.
GLASS ALCOHOL LAMP.

Price..... each, $0 15



NO. 1969.
JUNIOR HOT BLAST BLOW-PIPE.

For Gasoline.

Suitable for General Shop and Bench Work of a light character.

A valuable tool for jewelers for light brazing, melting, sealing wax, tempering springs and small work in general; also, a bench furnace, electricians for light soldering and small work requiring a blow torch.

Bicycle repairers for melting wax in cementing tires, and many other purposes.

Price.....each, $2 50

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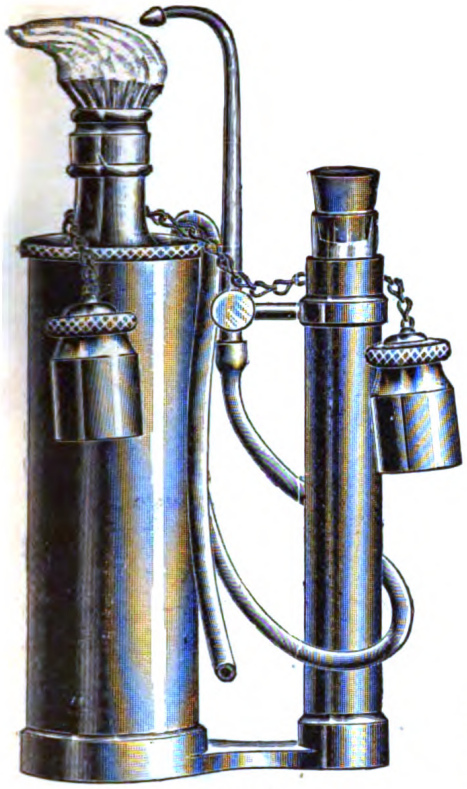
TOOLS L

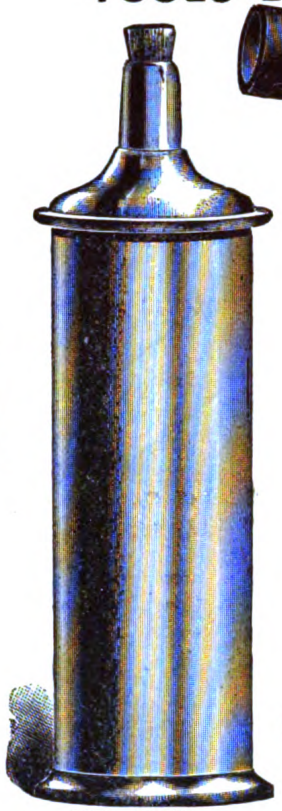


NO. 1971.

WILSON'S COMBINATION TORCH FOR ALCOHOL.

Can be carried in pocket. Made of brass, highly polished. Handle contains vial for acid. Blow-Pipe is adjustable and the wick is large, so that a large or small compact flame can be used at will.

Price.....each, $3 00

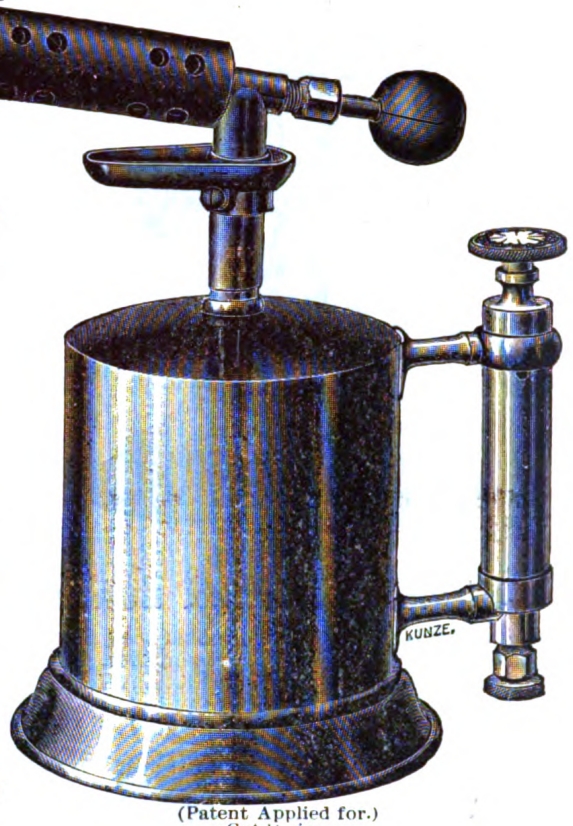


NO. 4359.

GASOLINE LAMP, OXIDIZED METAL.

Throws a flame large enough for soldering with Blow-Pipe. In filling Lamp unscrew the bottom and pour in gasoline.

Price.....each, $0 25



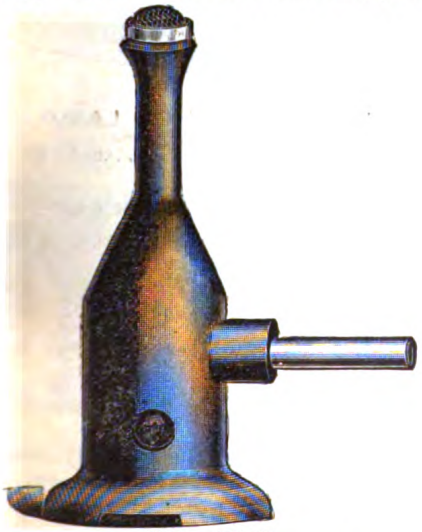
(Patent Applied for.)
Cut ½ size.

NO. 1970.

THE IMPERIAL HOT BLAST BLOW-PIPE.

FOR GASOLINE.

The burner has a generator double the strength of any other. It can be regulated to furnish any size flame by a simple turn of the knob, and burns four hours at a stretch. It gives a hotter blast than any other when needed, hence does quicker work. It has patent removable seat for needle valve, which, when worn out, can be replaced at a cost of 15 cents, and makes the torch equal to new. The Imperial is the most convenient, durable, reliable and safest tool of this kind now on the market, and adapted to a hundred purposes; a complete tool for soldering, brazing, burning paint, melting metals, heating and soldering coppers, frozen pipes, heavy soldered joints, etc., etc. Every one warranted and tested to 30 lbs. pressure. Price.....each, $5 00



NO. 1972.

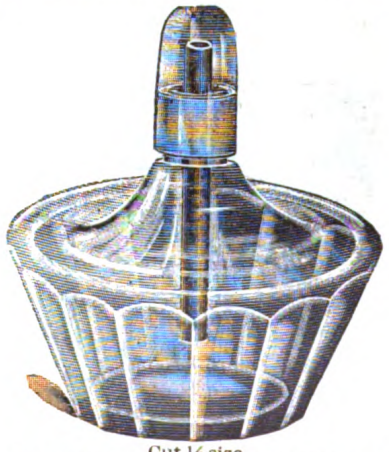
THE WORCESTER BURNER.

An entirely new gas heating apparatus by blast combustion. By this process we are enabled to give about 500 degrees more heat at the same cost over other styles of combustion, with positively no odor. With this burner you can obtain a high temperature without a blower sufficient for melting metals, pickling, etc. The finest of its kind yet produced.

Price.....each, $1 25

LAMP WICKS.

Each		$0 05
No. 1.	Small, per doz.	15
No. 2.	Med., "	20
No. 3.	Large, "	25



Cut ½ size.

NEW SHAPE GLASS ALCOHOL LAMP.

No. 4360. Price.....$0 50

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TOOLS L.

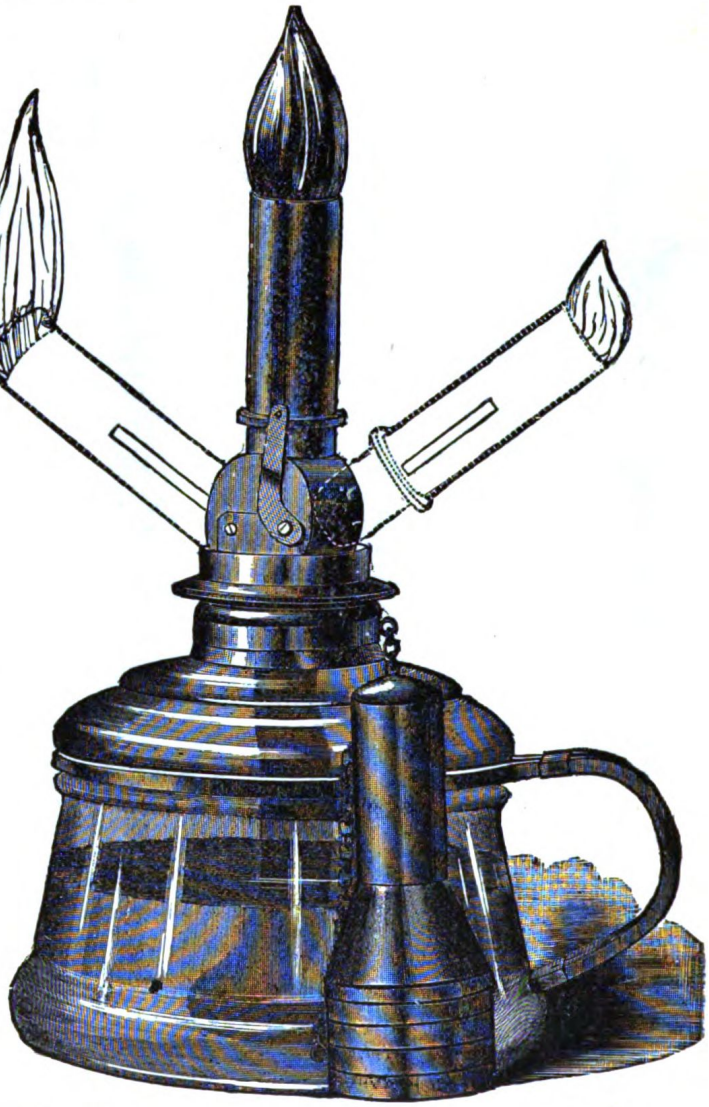
NO. 1978.

"PERFECT" DUPLEX BURNER.

Price on stand to connect with rubber hose.....$1 25
Price without stand to apply to gas bracket..... 1 00
Rubber tubing per foot..... 15

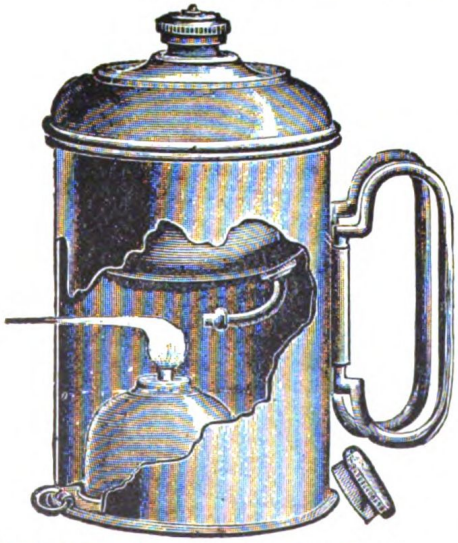
ALCOHOL LAMP.

No. 1981. Brass $0 30
Nickel-plated..... 50



NO. 1979. HOEHN'S PATENT ALCOHOL LAMP.

Price.....each, $0 65



NO. 1983. Showing Working Parts.

COMBINED COPPER LAMP AND BLOW-PIPE WITH CUP.

No. 1983.	Height,	4½	in.;	diam.,	2¾	in.;	diam. of cup,	2½	in.;	Price..	$1 25
" 1984.	"	4¾	"	"	3⅛	"	"	"	2⅞	" "	.. 1 45
" 1985.	"	6¾	"	"	4⅝	"	"	"	4¾	" "	.. 1 75
" 1986.	"	Largest Size, Price									2 75

Directions.—Fill boiling cup with alcohol (once only) and pour it into blow-pipe.

Place blow-pipe on cylinder, so that tube or pipe will be opposite opening n cylinder.

Fill lamp about half full of alcohol. Should flame become unsteady, draw lamp a little to the front. To increase size of flame, draw wick more to surface.

Care should be taken not to let wick come in contact with blow-pipe.

Do not let alcohol get low in blow-pipe.

There is no danger of explosion if above directions are followed.

Always see that tube to blow-pipe is open or free from dust before lighting lamp.

Blow-pipe is provided with safety-valve.

If above directions are strictly adhered to, these blow-pipes will give best of satisfaction

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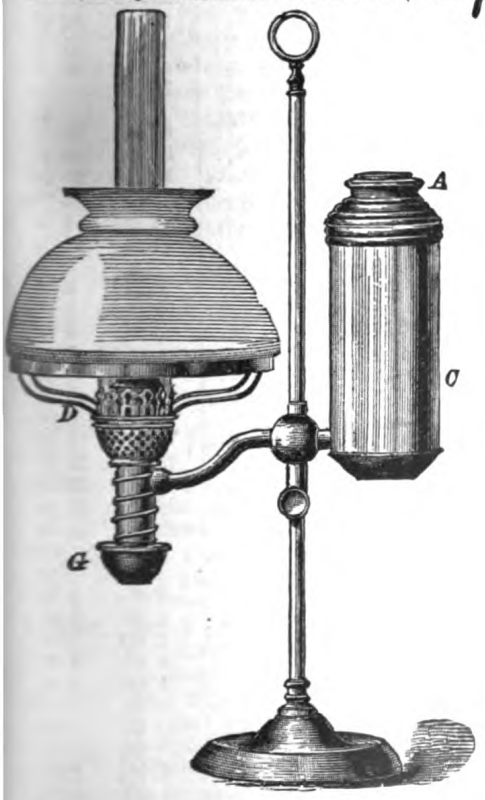
LAMPS—Continued.

No. 140. W. & S. Connecticut Lamp.
Height, 12 inches.
Nickel, complete as in cut..... each, $2 00

No. 2722. Rich Gold.
Complete, as in cut.
With decorated shade, No. 3 burner.
Price ....each, $6 50

No. 5. J. C. Rochester.
Complete, 6-inch dome.
Price..... .....each, $1 50



No. I. Improved "Perfection."
Suitable for work bench.
White shade.... .....each, $3 75
Green " .... " 4 00

NOTICE.

Extra charge for Boxing and Packing Lamps, 40 cents.

No. 10. New Mammoth Rochester.

		Each.
No. 10	Brass, complete, with 14-in. white dome shade.....	$4 50
No. 10A.	Brass, fount alone.....	3 38
No. 10B.	Brass, complete, 20-in. tin reflector.....	4 13
No. 10C.	Brass, without chimney or reflector.....	3 75

400 candle-power, hold 1 gallon of oil, and will burn about 12 hours.

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TOOLS L.

LATEST PRICES ON MOSELEY LATHES AND FIXTURES.

HARD LATHE. CUT HALF SIZE.

Price List of the Moseley Lathes and Fixtures.

No.		No. 1x2	No. 2.
1995	Lathe, including Screw Chuck with 6¼-in. Cement Chucks and Belting	$36 00	$36 00
1996	Lathe *without Tailstock*, including Screw Chuck, with 6¼-in. Cement Chucks and Belting	30 00	30 00
1997	Universal Head	35 00	35 00
1998	Universal Face Plate on Chuck (give list price)	11 00	11 00
1999	Slide Rest, Style 1, with Cutters	40 00	40 00
2000	Slide Rest, Style 2, with Cutters	35 00	
2001	Taper and Square Cutters for Slide or Caliper Rest	25	25
2002	Jeweling or Caliper Rest	35 00	35 00
2003	Jeweling or Caliper Rest with Lateral Screw	38 00	38 00
2004	Swing Rest without Caliper	18 00	20 00
2005	Extra Jeweling Rest Spindles	2 00	2 00
2006	Extra Jeweling Rest Spindles with Dogs (time savers)	4 00	4 00
2007	Pivot Polisher with 5 Laps and 2 Tapers, including Special Chuck for truing up Laps	42 00	42 00
2008	Pivot Polisher Laps, all kinds	40	40
2009	Pivot Polisher Laps on Taper (Diamond), ⅜ diameter	2 50	2 50
2010	Pivot Polisher Laps on Taper (Emery), ⅜ diameter	1 00	1 00
2011	Special Chuck for truing Pivot Polisher Laps	3 00	3 00
2012	Extra 4-inch Pulley for Counter to drive Pivot Polisher or Wheel Cutter	3 00	3 00
2013	Idler Pulleys and Stand to drive Pivot Polisher and Wheel Cutter	7 00	7 00
2014	Wig Wag for Staff and Leaf Polishing	35 00	40 00
2015	Fixture for holding Pinions while Polishing Leaves with Wig Wag	6 00	6 00
2016	Fixture for holding Laps in Wig Wag	4 00	4 00
2017	Wheel and Pinion Cutting Fixture, Style 1, six Spindles	75 00	75 00
2018	Wheel and Pinion Cutting Fixture, Style 2, three Spindles	55 00	55 00
2019	Wheel and Pinion Cutting Fixture, Style 3, single Spindles	22 50	22 50
2020	Wheel and Pinion Cutting (Angle) Fixture, Style 3, single Spindle	25 00	25 00
2021	Indexes, 50 Notches and less	50	50
2022	Index Blanks—Center hole and diameter to size	15	15
2023	Latch for Indexes	3 50	3 50
2024	Rounding-Up Cutters and Cutter Guides, each	1 00	1 00
2025	Round and Flat Bottom Cutters, each	1 00	1 00
2026	Fly Cutter Arbors	2 50	2 50
2027	Fly Cutters	1 00	1 00
2028	Steel Centers Pointed	15	15
2029	Steel Centers Hollow	20	20
2030	Steel Blank Centers	08	08
2031	Wire Chucks, Steel	1 00	1 00
2032	Wheel Chucks, Steel or Brass Face	1 00	1 00
2033	Crown Chucks (new style)	1 25	1 25
2034	Arbor, Screw and Taper Chucks, each	1 00	1 00
2035	Shoulder Chucks (above No. 60, $1.25 each)	1 00	1 00

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TOOLS L.

FIXTURES FOR THE MOSELEY LATHE—Continued.

No.	Lathe and Fixtures.	Hard. No. 1x2.	Hard. No. 2.
2038	Cylinder Sub Chucks (4 sizes) each	$0 75	$0 75
2039	Dead Center Chuck and Whirl	3 00	3 00
2040	Taper Chucks with Face Plate (give list price)	3 00	3 00
2041	Bezel Chuck (new style) mounted	8 00	8 00
2042	Beach Chuck "	10 50	10 50
2043	Mounting Chucks (all styles)	2 50	2 50
2044	Step Spindle Chuck	17 50	17 50
2045	Step Spindle Head	15 00	15 00
2046	Traverse Spindle Tailstock	10 00	12 00
2047	Screw Tailstock	15 00	15 00
2048	Regular Tailstock	7 00	7 00
2049	Counter Shaft	7 00	8 00
2050	Stepping Device	1 50	1 50
2051	Milling Fixture, Style 1	25 00	25 00
2052	Traverse Spindle Grinder	15 00	15 00
2053	Arbor Squaring Fixture, Style 1	9 00	9 00
2054	Arbor Squaring Fixture, Style 2	4 00	4 00
2055	Cement Chucks	¼-in., 5c.; -in ½., 15c.; ¾-in., 25c.	
2056	Steel Blank Tapers	5/32-in., 8c.; ¼-in., 20c.; ⅜-in., 30c.	
2057	Saws, 4 different thicknesses	½-in., 15c.; ¾-in., 20c.; 1-in., 25c.	
2058	Saws, 4 different thicknesses, Ground	½-in., 25c.; ¾-in., 35.; 1-in., 45c.	
2059	Belting per foot	No. 1, 6c.; No. 2, 8c.; No. 3, 10c.	
2060	Foot Wheels	30 lb., $8.00; 40-lb., $9.00; 50-lb., $10.00	

2061	Tin and Copper Laps on Tapers	1½-in., $2 00	Same not mounted	1 50
2062	Iron Laps on Tapers	1½-in., 1 75	Same not mounted	1 25
2063	Box Wood Laps on Tapers	1½-in., 1 25	Same not mounted	75
2064	Emery Laps on Tapers	1½-in., 1 25	Same not mounted	75
2065	Copper Laps on Tapers	1½-in., charged	with Diamond Powder	5 00
2066	Oil Stone Laps on Tapers	1½-in., 4 00	Mounted on Chuck	5 25
2067	Universal Dog	1 00	Solid Dog	75
2068	36 Jewelers' Twist Drills in case	4 00	Pivot Drill Chucks	75
2069	Grooved Table for Hand Rest	1 00	Wilcox Filing Block	1 00
2070	Drilling Plate for Tail Spindle	75	Tool Setter for Slide Rest	75
2071	Tempered Wire, 51 sizes in box	25	Lathe Oil per bottle	30
2072	Filing Rest to go in Hand Rest by which wire can be filed rapidly and correctly			1 00
	T and L Graver Rest, each			75

NO. 1X2 CHUCK.

NO. 2 CONOIDAL CHUCK.

NO. 3 CHUCK.

A Few Combinations of the 1x2 and No. 2 Moseley Lathe, with Prices

No. 2073 No. 2 Lathe, with 10 Chucks, includes 6 wire chucks, 2 wheel chucks; 1 taper chuck; 1 screw chuck; 1 each ¾. ½ and 6¼-in. cement brasses; 2 each brass and steel tapers, chuck block and belting. Price, hard $44 00

No. 2074 No. 2 Lathe, with 12 Chucks, includes 8 wire chucks; 2 wheel chucks; 1 taper chuck; 1 screw chuck; 1 each ¾, ½ and 6¼-in. cement brasses; 2 each brass and steel tapers, chuck box and belting. Price, hard 46 00

No. 2075 No. 2 Lathe, with 17 Chucks, includes 12 wire chucks; 3 wheel chucks; 1 taper chuck; 1 arbor chuck; 1 screw chuck; 1 cement brass ¾-in. diameter; 1 cement brass ½-in. diameter; 6 cement brasses ¼-in. diameter; 2 each steel and brass tapers; chuck box and belting. Price, hard 51 00

No. 2076. No. 2 Lathe, with 38 Chucks, includes 30 wire chucks; 5 wheel chucks, 1 screw chuck; 1 taper chuck; 1 arbor chuck; 1 cement brass ¾-in. diameter; 1 cement brass ½ in. diameter; 6 cement brasses ¼-in. diameter; 2 each steel and brass tapers; 4½-inch saws; stepping device; counter shaft; chuck block and belting; drilling plate for tail spindle; L Graver Rest. Price, hard 80 00

Combinations changed to suit the purchaser.

☞ Please give List Price when ordering.

Special Discount Quoted on Application.

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REDUCTIONS OF

Combinations of Webster-Whitcomb Lathes.

FEBRUARY 1st, 1894.

SIZES OF LATHES.

Webster-Whitcomb. Length of bed, 11 inches. Bed to center, 1.97 inches. Swings, 3.94 inches.
Extra length of Bed, $1.00 per inch.

No. 4361. Lathe, which includes taper chuck and its steel center. Tailstock spindle and its steel center, screw chucks, 6 ¼ in. cement chucks, and 9 ft. round belting..... $36 00

No. 4362. Lathe, *less tailstock*, same as above, except no tailstock and tailstock spindle and centre, and no taper chuck and center..... 30 00

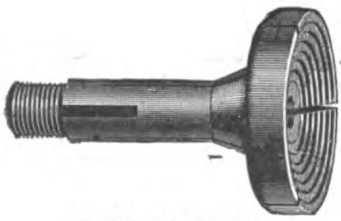
No. 4363. Lathe, as first described above and 10 wire chucks, (12 chucks,) and Arrick's balance protector..... 46 00
(Size of chucks—Nos. 5, 6, 7, 8, 9, 10, 12, 16, 20, 40.)

No. 4364. Lathe, as first described above and 15 wire chucks, (17 chucks,) and Arrick's balance protector..... 51 00
(Size of chucks—Nos. 4, 5, 6, 7, 8, 9, 10, 12, 16, 20, 24, 30, 34, 40, 50.)

No. 4365. Lathe, as first described above and 20 wire chucks, (22 chucks,) and Arrick's balance protector..... 55 50
(Size of chucks—Nos. 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 34, 40, 50.)

No. 4366. Lathe, as first described above and 30 wire chucks, (32 chucks,) and Arrick's balance protector..... 65 00
(Size of chucks—Nos. 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 56, 60.)

No. 4366½ Lathe, as first described above and 40 wire chucks, (42 chucks,) and Arrick's balance protector..... 74 00
(Size of chucks—Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60.)



Screw chucks..... $1.50

Taper chucks..... 1.50

Universal face plate on chuck.10.00

WIRE CHUCK.
Webster-Whitcomb.....$1.00

WHEEL CHUCK.
Webster-Whitcomb.....$1.00

Special Discount Quoted Upon Application.

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TOOLS L.

Webster-Whitcomb Lathe Fixtures and Attachments.

No.	SPECIAL DISCOUNT QUOTED ON APPLICATION.	Webster-Whitcomb No.2Chuck Hard.
2088	**Lathe, which includes** Taper Chuck and its Steel Center, Tailstock Spindle and its Steel Center, Screw Chuck, 6¼-inch Cement Chucks, and 9 ft. of Round Belting	**$36 00**
2089	**Lathe, less Tailstock,** same as above, except No Tailstock and Tailstock Spindle and Center, and No Taper Chuck and Center	30 00
2090	Universal Head, patented	**32 00**
2091	Universal Plate on Chuck	**10 00**
2092	Slide Rest, 3 Slides, with Square and Round Tool Holders, 6 Squares and 2 Round Tools	**32 00**
2093	Tools for Slide Rest and Jeweling Rest, round or square	25
2094	Jeweling Rest, with Calipers } 3 Blank Tools and	**30 00**
2095	Jeweling Rest, with Calipers and Cross Feed Screw } 3 Finished Tools	**35 00**
2096	Extra Jeweling Rest Spindles	2 50
2097	Dogs for Jeweling Rest Spindles	2 00
2098	Pivot Polisher and 4 Laps	**40 00**
2099	Pivot Polisher Laps	40
2100	Taper Chuck, for Pivot Polishing Laps and Tapers	3 00
2101	**For Wheel Cutting.** Wheel Cutting Fixture (goes on 3-slided Slide Rest) and 1 Cutter Arbor	40 00
2102	Index Plates, 6 inches dia., **29** rows of holes, all Nos. to 50 and even Nos. to 100, also 55, 63, 65, 75	12 00
2103	Index Plates, 8 inches dia., **36** rows of holes, all Nos. to 80 and even Nos. to 100, also 144, 360, 365, 366	15 00
2104	Index Pointer	8 00
2105	Idler Pulleys and Stand for Wheel Cutter, also for Pivot Polisher	6 00
2106	Extra Counter Pulley for driving Wheel Cutter and Pivot Polisher, 4 in	3 25
2107	Round Cutter Arbor	2 50
2108	Fly Cutter Arbor	2 50
2109	Wheel and Pinion Cutting Arbors, per set of 12	36 00
2110	Step Spindle in Chuck	20 00
2111	Screw Tailstock	**12 00**
2112	Regular Tailstock, with one Spindle	7 00
2113	Milling Fixtures for Slide Rests	25 00
2114	Rounding Up Fixtures, 17 Collets	18 00
2115	" Cutter Arbor	3 00
2116	Filing Fixtures, patented	10 00
2117	Counter Shafts, cone pulley, 3 in. diam.; main pulley, 3½in diam	8 00
2118	Chucks, Wire	**1 00**
2119	" Wheel	**1 00**
2120	" Screw	**1 50**
2121	" Taper	**1 50**
2122	" Beach, on chuck stem	**11 00**
2123	" Snyder, " "	**12 00**
2124	" Fitting Beach	**2 50**
2125	" Face Plate for Dogs or Carrier	3 00
2126	" for Drills	1 50
2127	" Balance Pivot Polishing, to take Staff with Balance and Hair Spring	15 00
2128	" Cement Pivoting—Watch Factory style	6 00
2129	" Cylinder, set of 4	4 00
2130	" Dead Center Whirl	4 00
2131	Steel Male Centers	15
2132	" " " ¼ in	20
2133	" " " ⅜ in	30
2134	" Female "	20
2135	" Blank "	08
2136	Saw-arbors	2 50
2137	"Webster" Foot Wheel	30 lb.—$8 50 ... 40 lb.—$10 00 ... 50 lb.—$12 00
2138	Brass Cement Chucks	¼ in.—.06 ... ½ in.—.15 ... ¾ in.—.25
2139	Saws (4 different thicknesses), each	½ in.—.15 ... ¾ in.—.20 ... 1 in.—.25
2140	Dogs for Face Plate Chucks	Small, .75 ... Large, 1 00
2141	Belting, per foot	No. 1, .06 ... No. 2, 08
2142	Tempered Wire for Pivoting, 50 sizes in box	Per Box, 25
2143	Emery Laps	1½ in., 50
2144	Boxwood "	1½ in., 75
2145	Ivory "	1½ in., 1 25
2146	Tin or Copper "	1½ in., 1 50
2147	Copper " charged with diamond powder, both sides	1½ in., 5 00
2148	Oilstone "	1½ in., 4 00
2149	Case of 36 Jewelers' Twist Drills	4 25
2150	Chuck Block	50
2151	Chuck Block, with glass cover	1 00
2152	Arrick's Balance Protector (highly recommended)	50
2153	Bottle of Lathe Oil	30

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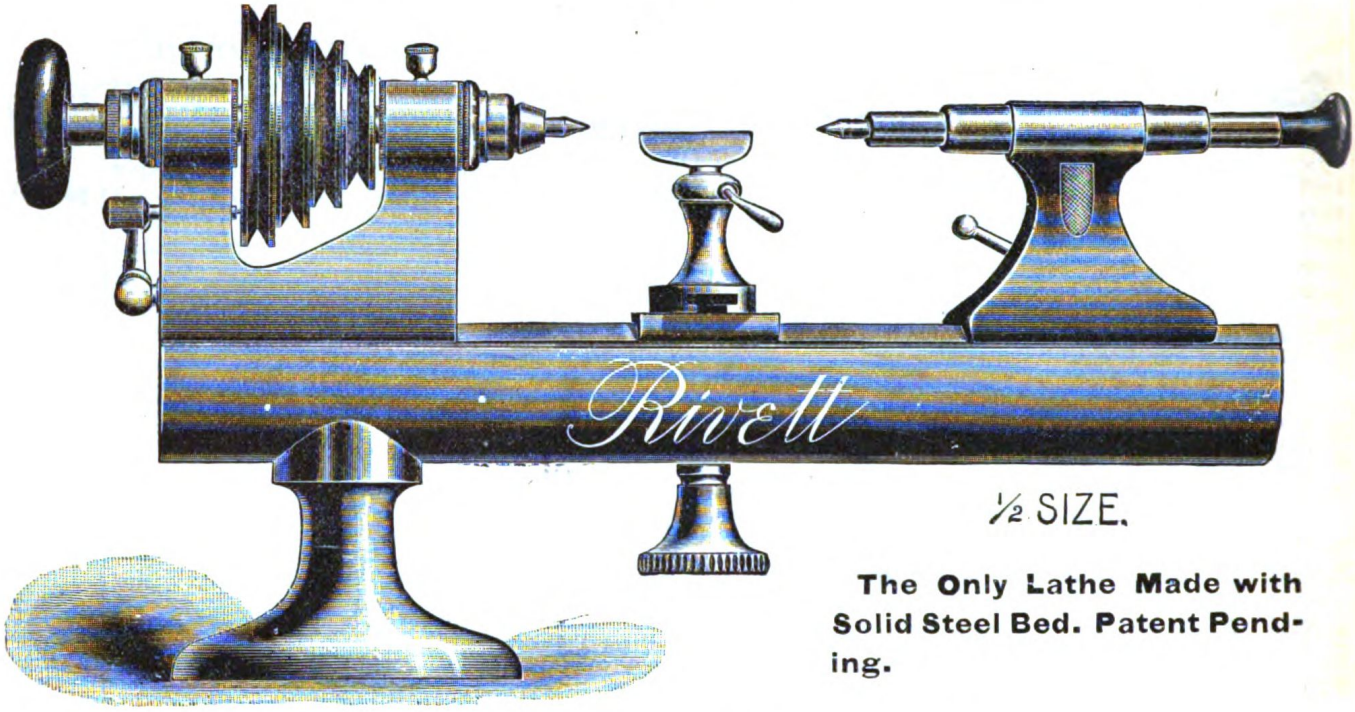

½ SIZE.

The Only Lathe Made with Solid Steel Bed. Patent Pending.

PRICE LIST OF COMBINATIONS OF

RIVETT AND CROSBY LATHES.

SIZE OF LATHES:

Length of Bed, 11 1-2 inches. **Bed to Centre, 2 3-16 inches.** **Swing, 4 3-8 inches.**

RIVETT STEEL BED.

No. 4364.	Lathe plain—which includes taper chuck and its steel center, tailstock spindle and its steel center, screw chuck, 6 ¼ in. cement chucks, 9 feet of round belting	$ 40 00
No. 4365.	Lathe plain—less tailstock; same as above	32 00
No. 4366.	Lathe, as first described above, and 10 chucks. Chucks any size, wire or wheel	50 00
No. 4367.	Lathe, as first described above, and 15 chucks. Chucks any size, wire or wheel	55 00
No. 4368.	Lathe, as first described above, and 16 wire and 2 wheel chucks, 1 chuck box with cover, and jewel chuck. Chucks any size	59 50
No 4369.	Lathe, as first described above, and 23 wire, and 5 wheel chucks, 1 chuck box with cover. Chucks any size	69 00
No. 4370.	Lathe, as first described above, and 33 wire and 5 wheel chucks, 1 chuck box with cover. Chucks any size	78 00
No. 4371.	Lathe, as first described above, and 80 wire and 5 wheel chucks, 1 arbor chuck, 4 ½ in. saws, 1 each 1½ in. emery, copper and ivory laps, 1 chuck box with cover	125 00

CROSBY CAST IRON BED.

(Same as all other makers use.)

No. 4372.	Lathe plain—which includes taper chuck and its steel center, tailstock spindle and its steel center, screw chuck, 6 ¼ in. cement chucks, 9 feet of round belting	$ 35 00
No. 4373.	Lathe plain—less tailstock, same as above	28 00
No. 4374.	Lathe, as first described above, and 10 chucks, chucks any size, wire or wheel	45 00
No. 4375.	Lathe, as first described above, and 15 chucks, chucks any size, wire or wheel	50 00
No 4376.	Lathe, as first described above, and 16 wire and 2 wheel chucks, 1 chuck box with cover, and jewel chuck. Chucks any size	54 50
No. 4377.	Lathe, as first described above, and 23 wire and 5 wheel chucks, 1 chuck box with cover. Chucks any size	64 00
No. 4378.	Lathe, as first described above, and 33 wire and 5 wheel chucks, 1 chuck box with cover. Chucks any size	73 00
No. 4379.	Lathe as first described above, and 80 wire and 5 wheel chucks, 1 arbor chuck, 4 ½ in. saws, 1 each 1½ in. emery, copper and ivory laps, 1 chuck box with cover	120 00
Wire and wheel chuck, each		1 00

Special discount for cash quoted upon application.

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PRICE LIST OF RIVETT ATTACHMENTS.

No.		
2160	Arbor Squaring Fixture or Filing Rest, patented,	$8 00
2161	Belting, per foot, Round, .06, Flat	08
2162	Centres, Steel Male, 3 sizes each	25
2163	" " Female, 3 "	25
2164	Countershaft, patented	8 00
2165	" " Overhead attachment	6 00
2166	" Plain Single Stand	5 00
2167	Chucks, Wire, Best Steel, hardened and ground,	1 00
2168	" Screw	1 25
2169	" Taper	1 25
2170	" for Pivot Drills, Taper Shank to fit Tailstock or Handle	1 25
2171	" Wheel	1 00
2172	" Arbors for saws, laps, etc.	2 50
2173	" Jewel Centre	4 00
2174	" for Jeweling Soft Steel, same as used in Watch Factories, stepped for Jeweling	60
2175	" for Jeweling Soft Steel, Blank	50
2176	" for Cement Pivoting—Watch Factory Style	3 00
2177	" with guide for Rounding Up Tool	4 00
2178	" Face Plate	3 00
2179	" Mounting Beach or Snyder	2 50
2180	" Brass Cement, per doz. ¼ in.	50
2181	" " " " ½ in.	1 50
2182	" " " " ¾ in.	2 50
2183	" " " " 1 in.	3 50
2184	" Box with Cover	1 00
2185	Cutting Wheel Attachment, plain revolvable Tailstock, 12 Index Plates	30 00
2186	Cutting Wheel Attachment, revolvable Tailstock, with Slide, 12 Index Plates	40 00
2187	Dogs for Jeweling Rest Spindles	2 00
2188	" Face Plate Chucks, small	75
2189	" " " " large	1 00
2190	Index Plates, according to spaces $1 00 to	3 00
2191	Jeweling Rest, with Calipers	30 00
2192	" " " and Cross Feed Screw	35 00
2193	" " extra spindles, each	2 50
2194	" Head or Pivoting Head with Improved Bearing	18 00
2195	Laps, Emery, 1½ inches	50
2196	" Boxwood, 1½ "	50
2197	" Ivory, 1½ "	1 25
2198	" Copper, 1½ "	1 25
2199	" Tin, 1½ "	1 50
2200	Laps, Steel or Copper, charged with diamond powder on both sides, 1½ inches	$3 00
2201	Pivot Polisher	15 00
2202	" " Laps	40
2203	Rivett Footwheel	10 00
2204	" Staking Tool, Patented	15 00
2205	" " " Punches	25
2206	" " " Stumps	25
2207	" " " Cover (Glass)	75
2208	Rounding Up Tool, Patented	25 00
2209	" " " Cutters, each	1 00
2210	Slide Rest, Patented, 3 tools, cutting edge on each end	35 00
2211	" " Tools, with cutting edge on each end	25
2213	" " (Patented) with Cutting Wheel attachment, Sliding Revolvable Tailstock, 12 Index Plates	75 00
2214	" " (Patented) with Cutting Wheel attachment, Plain Revolvable Tailstock, 12 Index Plates	65 00
2215	Saws, each ½ in. $0 15; ¾ in. $0 20; 1 in.	25
2216	Screw Plates for Brass Cement Chucks	1 50
2216	Taps " " " "	75
2217	Tapers, Steel or Brass, 3 16 in., per doz.	1 50
2218	" " " ¼ " "	1 75
2219	" " " ⅜ " "	2 50
2220	Tailstock Plain, new Binder. (Patent Pending)	8 00
2221	" " old style Binder	6 00
2222	" with Screw	15 00
2223	" Half open, with Spindle	13 00
2224	" with Traverse "	12 00
2225	Traverse Spindle Grinders	30 00
2226	" Grinder to go on Slide Rest	20 00
2227	Universal Head, hardened steel spindle, Bushing hardened and ground, Patent Jaws	35 00
2228	" Head, Bushing hardened and ground, Plain Jaws	30 00
2229	" Plate to fit Head, mounted on Hard Steel Chuck, shank hardened and ground, Patent Jaws	17 00
2230	" Plate to fit Head, mounted on Hard Steel Chuck, shank hardened and ground, Plain Jaws	12 00
2231	Wire, Stubs, for Slide Rest Tools, cut to length. 25 pieces in a bunch	50
	" Gauge (Stub) Nos. 1 to 80.	

NO. 2174. JEWELING CHUCK. SOFT STEEL. $0 60

The above chuck is the same as is used for Jeweling in all Watch Factories. This chuck is one of the most useful in the watchmakers' outfit, as when the step wears out, or gets out of true, he can turn it down and true it up again himself as the chuck is soft; whereas in the wire chucks the hardening is apt to throw the step out of true, and no maker of chucks pretends to grind the step.

This chuck is put within the reach of everybody, and is furnished with the step cut all ready for Jeweling or in the blank ready for steps to be cut for.....$0 50

NO. 2170. PIN VISE TO FIT HANDLE OR TAILSTOCK, $1 25 Hardened and Ground.

NO. 2205. NEW FORGED CYLINDER PUNCH.

For Rivett Staking Tool.....$0 25

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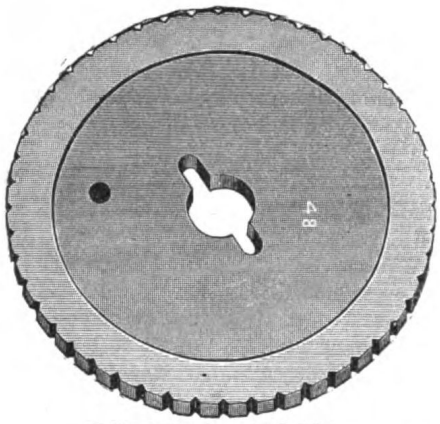
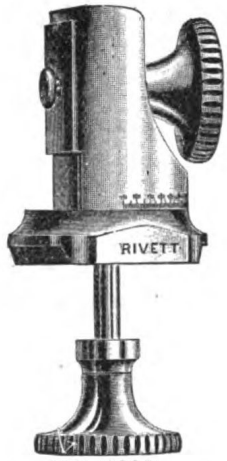
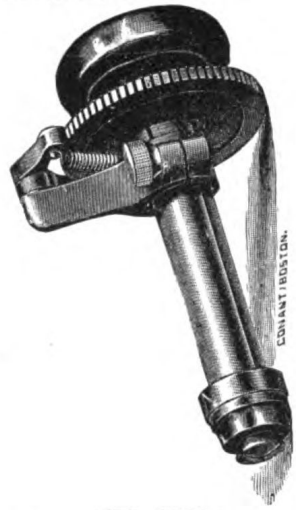
TOOLS L.
RIVETT LATHE ATTACHMENTS.



NO. 2190. INDEX.



NO. 2222.
REVOLVABLE TAIL-STOCK.

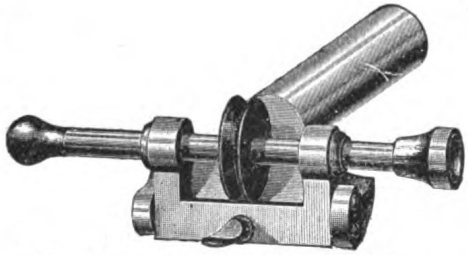


NO. 2222½.
QUILL FOR WHEEL CUTTING ATTACHMENT.

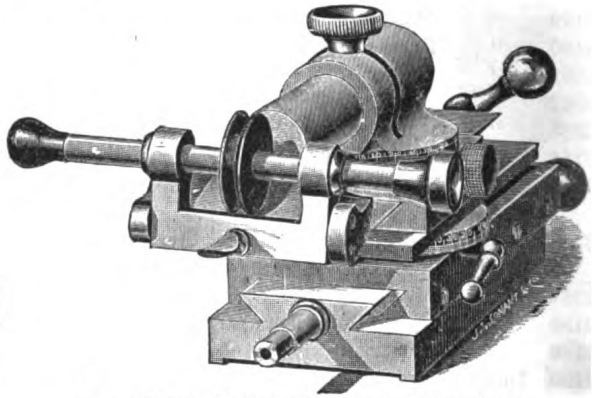
NO. 2178.
CHUCK WITH SCREW GUIDE AND CUTTER.
Price..... $4 00

Revolvable Tailstock No. 2222 and Quill No. 2222½, and 12 Index Plate No. 2190, Price, $35 00.
With adjustable slide, $40 00.

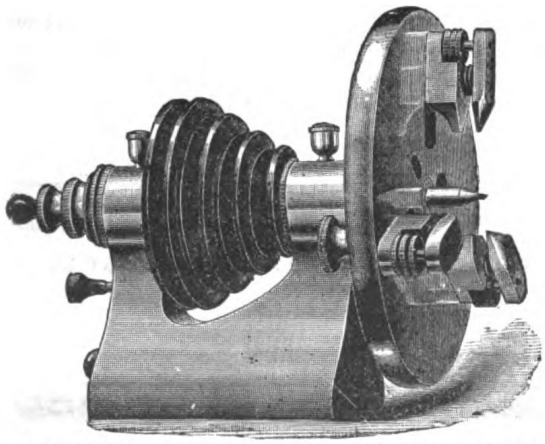
NO. 2227½.
PATENT JAW.
Patented Jan. 3, 1888.



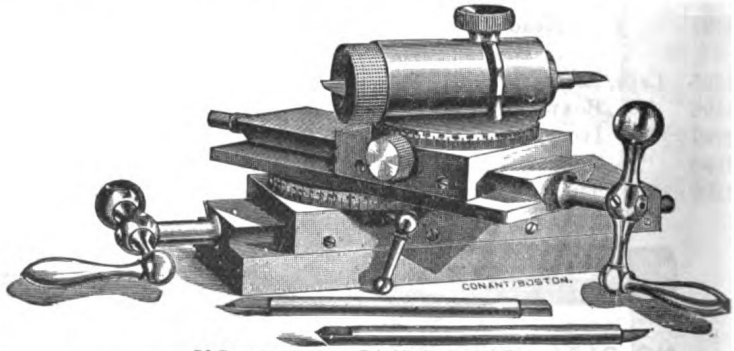
NO. 2201. PIVOT POLISHER.
Price.....$15 00



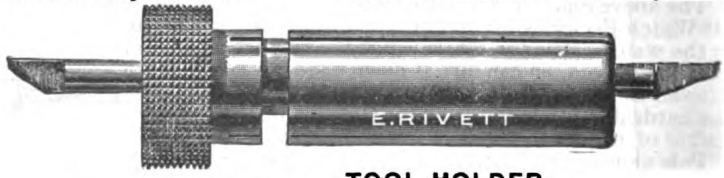
NO. 2210 AND 2201 COMBINED.
Slide Rest with Pivot Polisher .....price, $50 00



NO. 2227. UNIVERSAL HEAD, AND NO. 2227½. PAT. JAWS, COMBINED.
Price.....$35 00



NO. 2210. SLIDE REST.
Patented May 17, 1887. Price.....$35 00



TOOL HOLDER.
Included with Slide Rest above.

☞Special discount for cash upon application.

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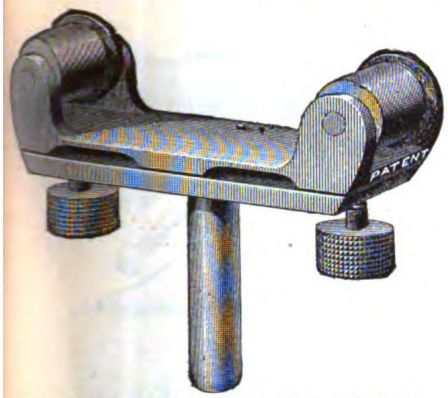
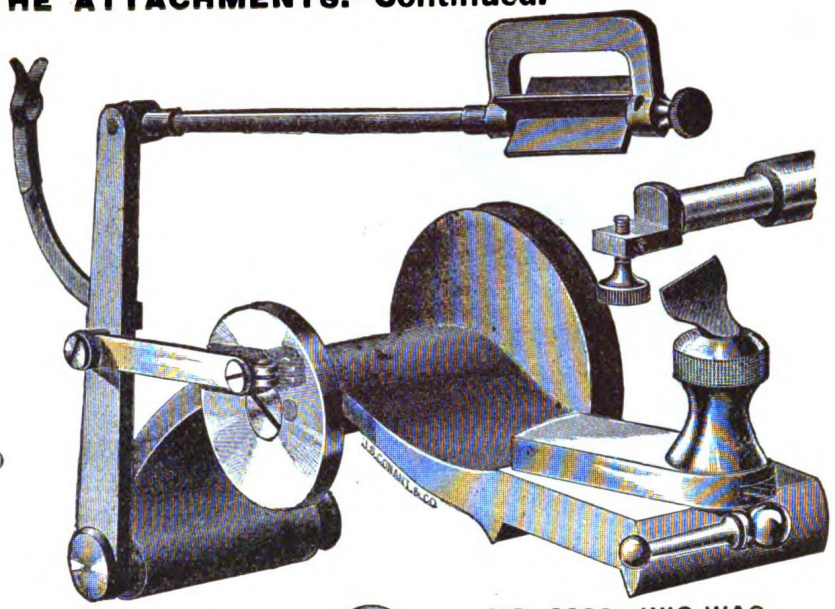
TOOLS L.

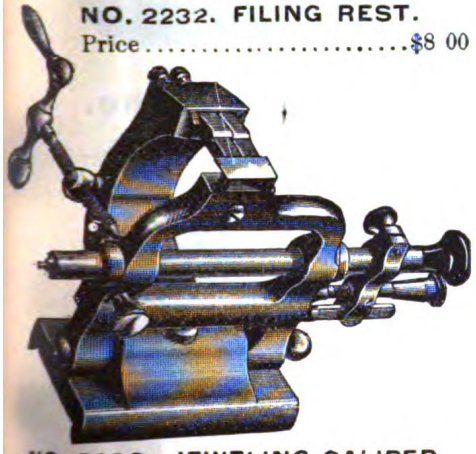
RIVETT LATHE ATTACHMENTS.—Continued.



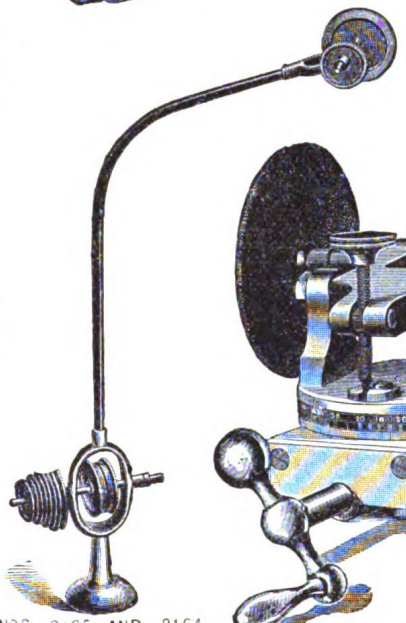
NO. 2232. FILING REST.
Price.....$8 00



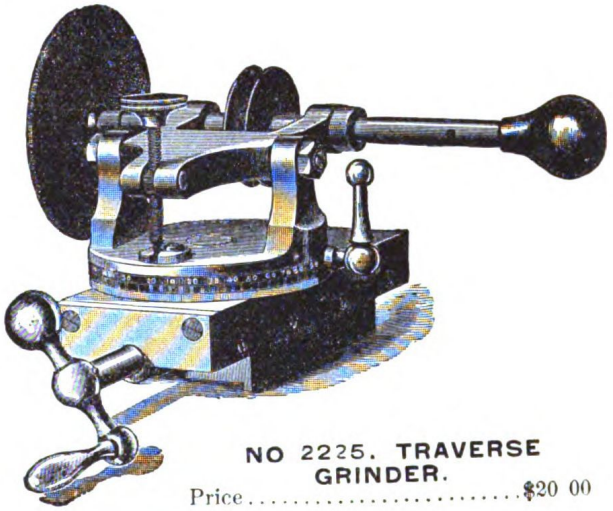
NO. 2233. WIG-WAG.
Price.....$45 00



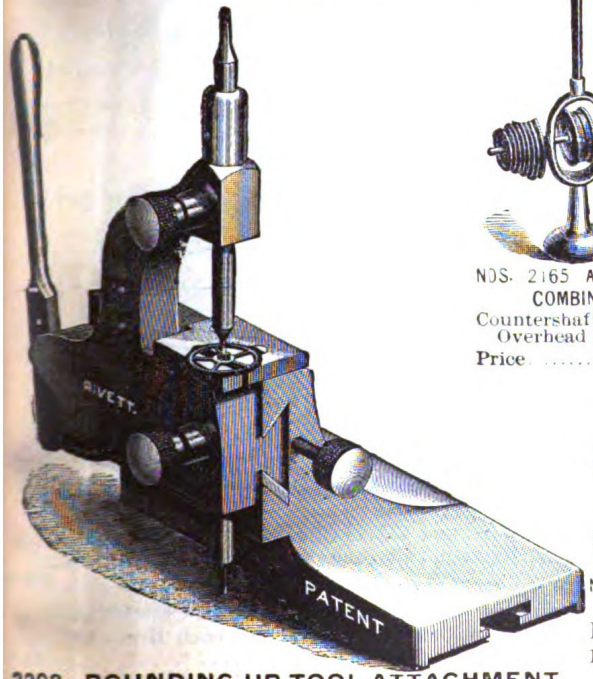
NO. 2192. JEWELING CALIPER REST.
Price.....$35 00



NOS. 2165 AND 2164 COMBINED
Countershaft with Overhead Power.
Price.....$14 00



NO 2225. TRAVERSE GRINDER.
Price.....$20 00



2208. ROUNDING UP TOOL ATTACHMENT.
Price.....$25 00

NO. 2164. COUNTER AND SHAFT.
Price.....$8 00
Patented Jan. 3, '88.

NO. 2171.

NO. 2167.

WHEEL CHUCK, $1 00 Wire Chuck, $1 00
Taper or Screw Chucks, each, $1 25

☞Special discount for cash upon application.

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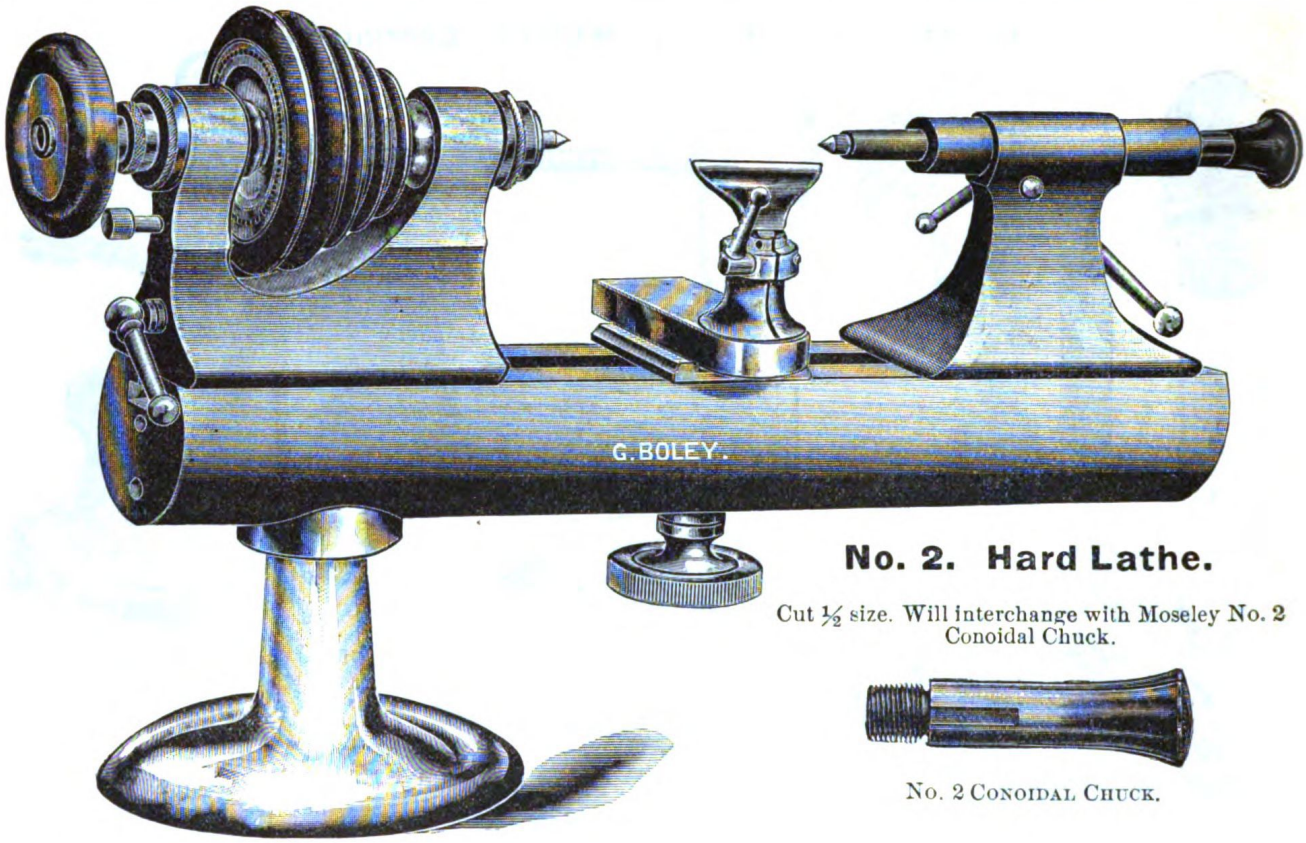


No. 2. Hard Lathe.

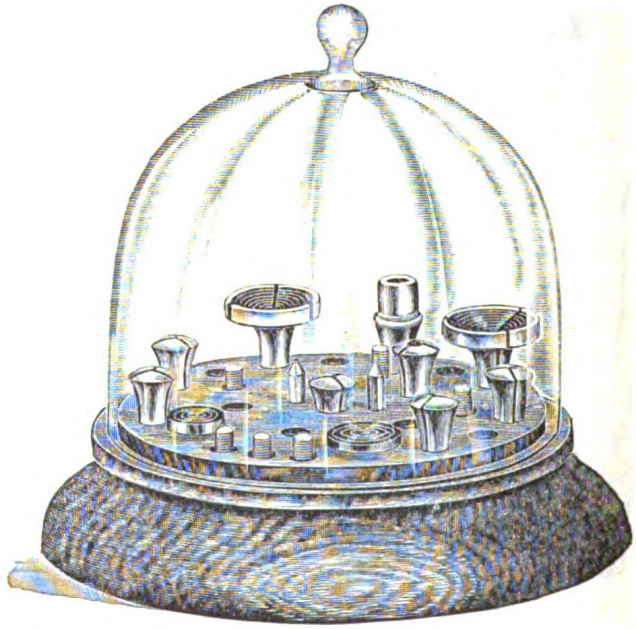
Cut ½ size. Will interchange with Moseley No. 2 Conoidal Chuck.

No. 2 Conoidal Chuck.

Our Esslingen G. Boley Lathe.

The Genuine G. Boley full-hard Lathe, No. 2 Moseley size.

To any one in need of a first-class, high grade, hard, well made and excellent finished Lathe, we can cheerfully recommend this one, and are willing to send same on approval to responsible parties.



No. **2234**. G. Boley Genuine Lathe, ten-chuck combination, includes six Wire, two Wheel-Chucks, one Taper-Chuck, one Screw-Chuck, one each ¾ and ½ inch and six ¼ inch Cement Brasses, two each Brass and Steel Tapers, Chuck-Block with Glass Globe and Belting, ... **$26 00**

No. 2235. G. Boley Genuine Lathe, fifteen-chuck combination, includes ten Wire-Chucks, three Wheel-Chucks, one Taper-Chuck, one Screw-Chuck, one each ¾ and ½ inch and six ¼ inch Cement Brasses, two each Brass and Steel Tapers, Chuck-Block with Glass Globe and Belting, net **29 00**

No. 2236. G. Boley Genuine Lathe, twenty-chuck combination, includes fifteen Wire-Chucks, three Wheel-Chucks, one Taper-Chuck, one Screw-Chuck, one each ¾ and ½ inch and six ¼ inch Cement Brasses, two each Brass and Steel Tapers, Chuck-Block with Glass Globe and Belting, ... **32 00**

Extra Chucks, each ..... 65 cents.

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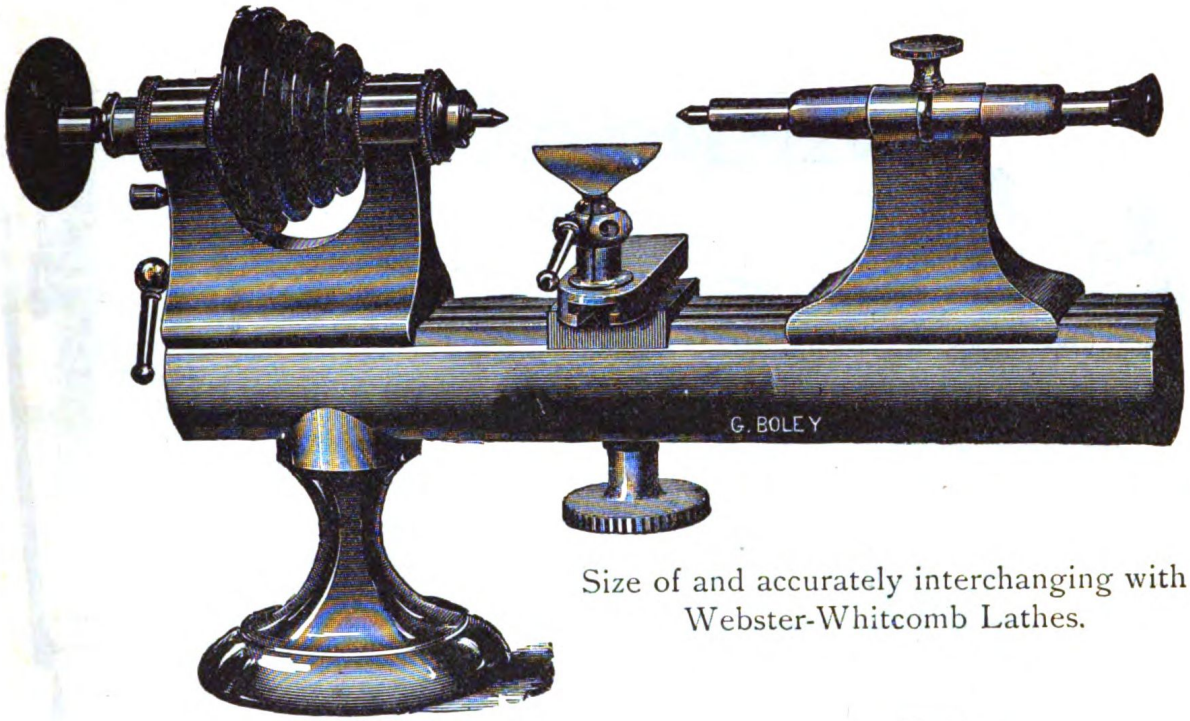
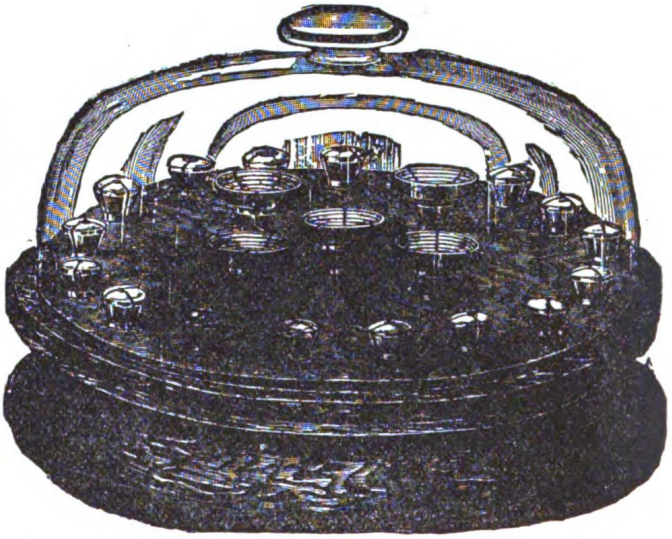
Genuine G. BOLEY Full-Hard American Lathe



Size of and accurately interchanging with Webster-Whitcomb Lathes.

THE VIRGINIA.

Parties intending to purchase a lathe should avail themselves of this opportunity of securing one of the best and cheapest outfits ever placed before them.



The above are of the best make and workmanship, and cannot be excelled.

No. 2237. Combination A. 10 Chuck.

Includes 1 Lathe No. 2 Hard, 6 wire chucks, 2 wheel or step chucks, 1 taper chuck, 1 screw chuck; also 1 each ¾-inch and ½-inch and 6 ¼-inch cement brasses, 4 steel tapers—1 round chuck block, with glass globe and 9 feet belting. Price..... $25 00

No. 2238. Combination B. 15 Chuck.

Includes 1 Lathe No. 2 Hard, 10 wire chucks, 3 wheel or step chucks, 1 taper chuck, 1 screw chuck; also 1 each ¾-inch and ½-inch and 6 ¼-inch cement brasses, 4 steel tapers, 1 round chuck block, with glass globe and 9 feet belting. Price..... 27 50

No. 2239. Combination C. 20 Chuck.

Includes 1 Lathe No. 2 Hard, 16 wire chucks, 2 wheel or step chucks, 1 taper chuck, 1 screw chuck; also 1 each ¾-inch and ½-inch and 6 ¼-inch cement brasses, 4 steel tapers, 1 round chuck block, with glass globe and 9 feet belting. Price..... 31 00

Extra chucks, each, $0 65 Extra wheel chucks, each, $0 85

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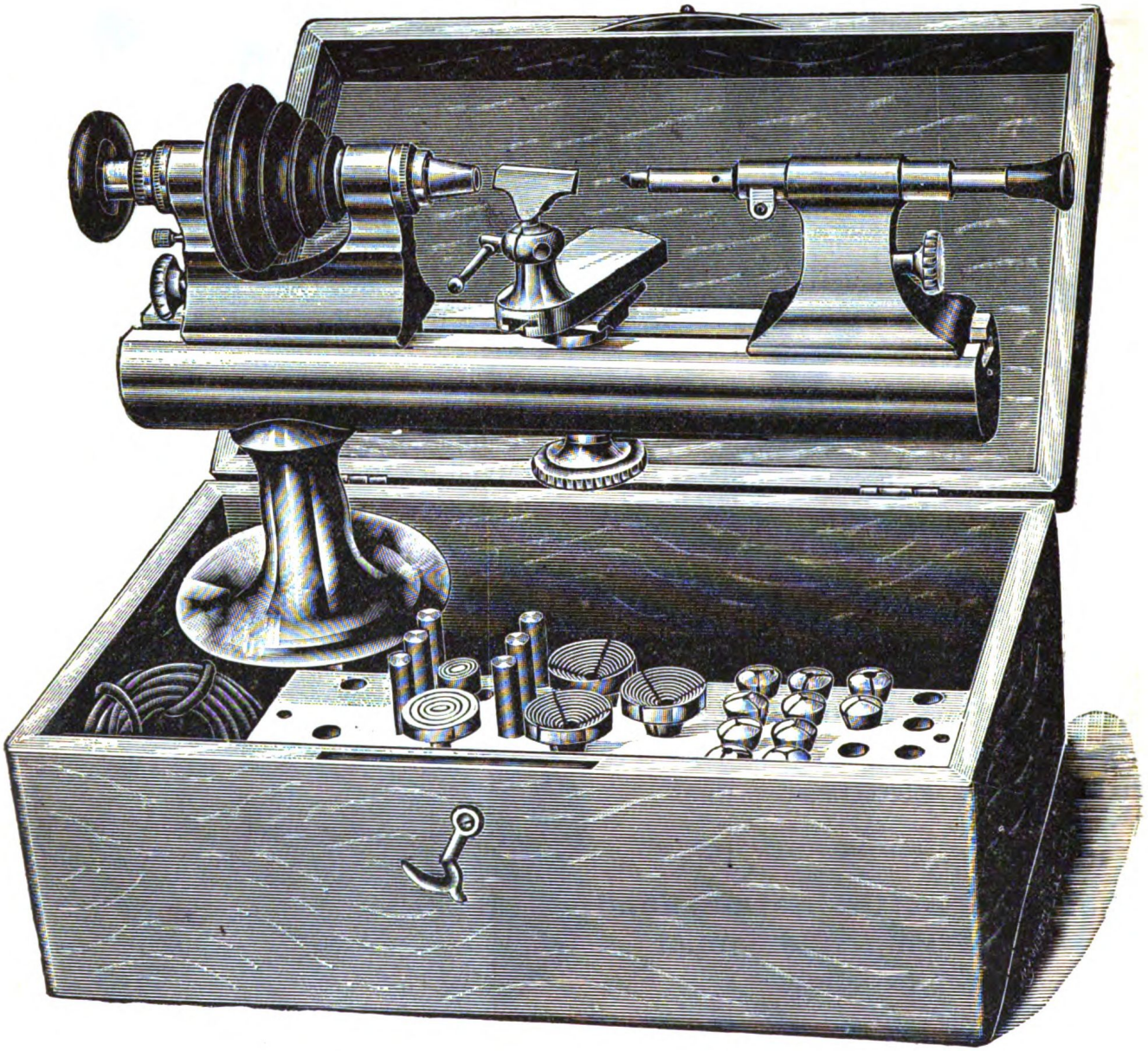
The Dresden Lathe.



OUR 1x2 DRESDEN HARD LATHE.

Interchanging with 1x2 Moseley. 15 Chuck Combination.

No. 2240. Price, complete, with the following attachments: 10 wire chucks, 3 wheel chucks, 1 screw chuck, 1 each ¾ and ½ and 6 ¼-inch cement brasses, and 1 chuck box $19 50

Extra Wire Chucks for above Lathe.... .....each, $0 65 Wheel Chucks.....each, 85

Universal Face Plate on Chuck 7 50

Slide Rest for above Lathe 10 50

Full Hard—Double Conical Bearings—Absolutely Perfect and Guaranteed—And All Attachments Can Be Had—All Interchangeable.

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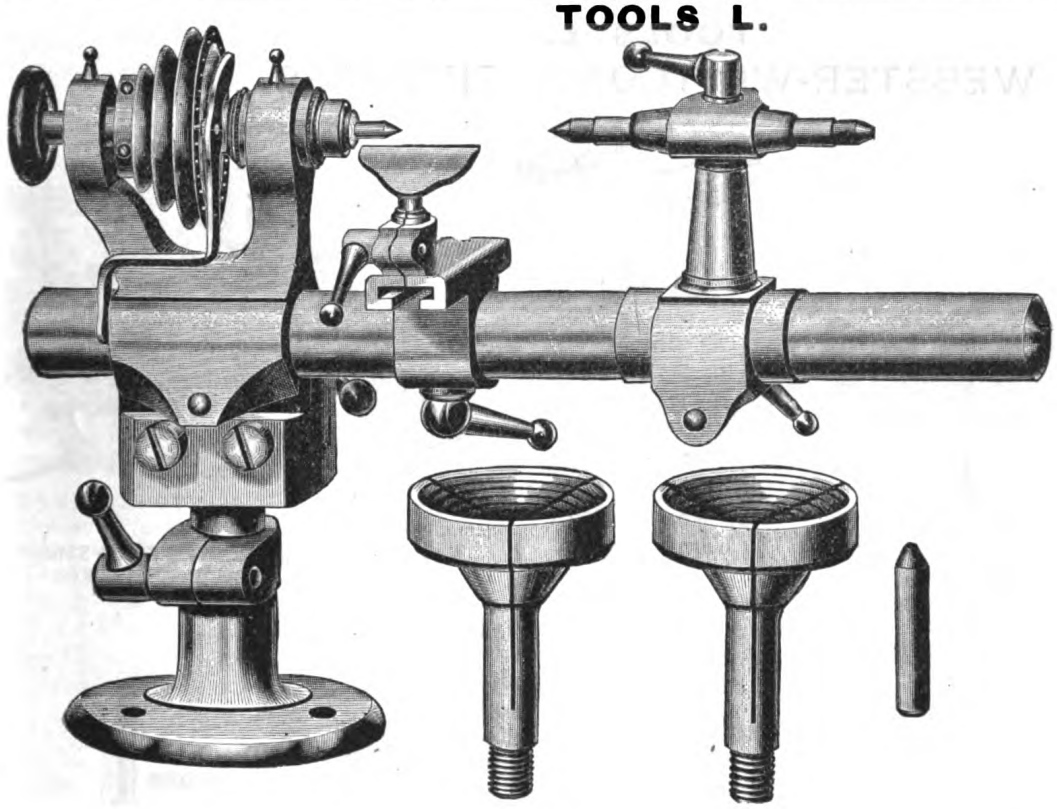
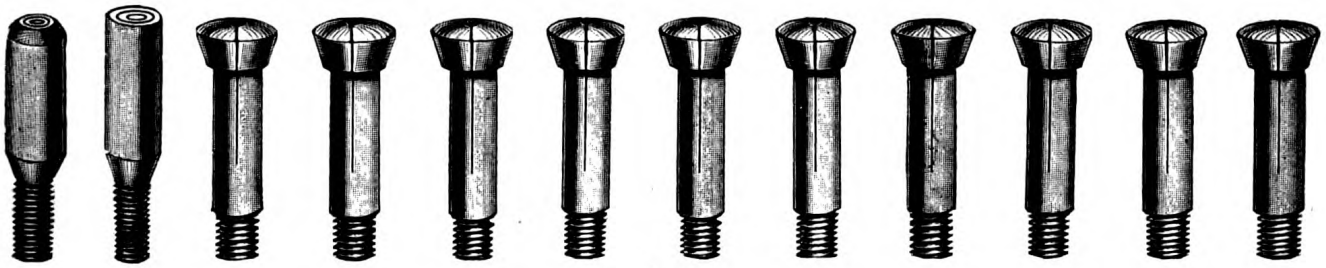
TOOLS L.





OUR NEW IMPROVED GENEVA LATHE.

WITH INDEX POINTER AND LATCH.

This lathe is by far the best made for the price in the market. They are made with hardened spindles and bearings; the bed is made of steel, giving it a fine, high polish, and free from all imperfections. We warrant them to be perfect in every part; nickel-plated; the cone is made of steel with three steps, with index pointer and latch at cone as shown in cut, with rubber knob on the end; the tailstock is provided with hard taper center, hardened and ground; the bed can be raised to suit the operator and can be removed with ease.

Length of bed, 10 inches. Bed to center, 1½ inches.

No. 2241.	Price, complete, including 10 wire chucks, 2 step chucks, 1 screw chuck, 1 taper and 4 cement brass chucks, put up in a box with lid and block to hold chucks. Price	$14 50
No. 2242.	Chucks for Geneva Lathe ..... each,	60
No. 2243.	" " " Dale Brand (Wire) ..... "	95
No. 2244.	" " " " (Wheel, 1 to 5) ..... "	95

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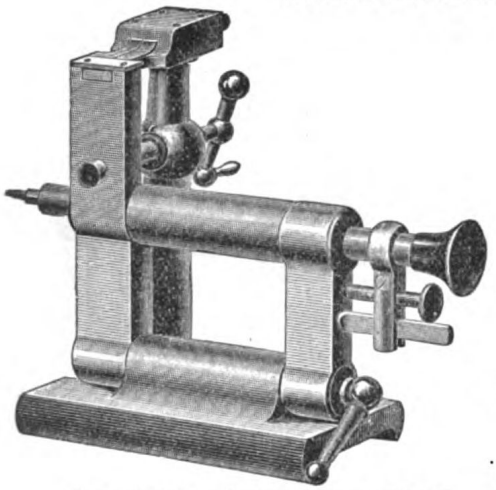
TOOLS L.

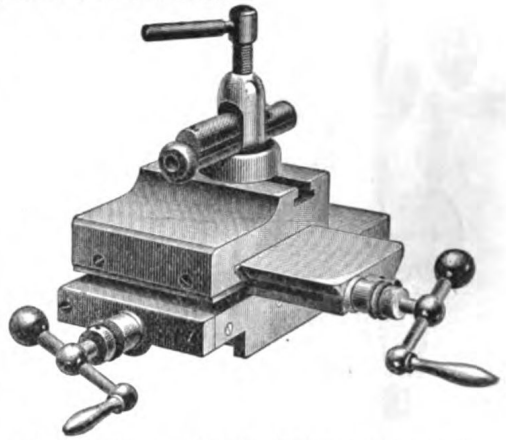
WEBSTER-WHITCOMB FIXTURES.



No. 2095. JEWELING REST.

No. 2095. Price.....$30 00
No. 2096. Price, with Lateral Screws..... 35 00

No. 4361.
Arbor Squaring Fixture for No. 1½ Whitcomb Lathe.
Price.....Each, $4 50



No. 2092. SLIDE REST (with 3 Slides).
Price.....$32 00

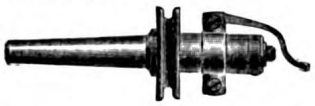
No. 2120. Screw Chuck. Price, $1.25.

No. 4362. Balance Chuck. Price, $1.25.

For taking the balance staff without removing roller or pin.

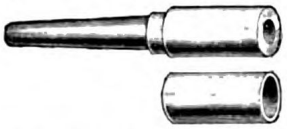
No. 2129. Cylinder Chuck. Price, $1.00.

We are now making these chucks from regular wire chuck blanks, instead of in the form of supplementary chucks. They are hardened and ground the same as a wire chuck, and are far more accurate than a supplementary chuck. Watch repairers who have tried them give them the highest recommendation.



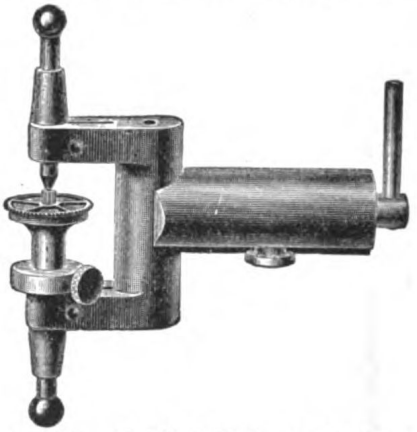
No. 4363. Dead-center Whirl. Price, $2.00.

Drives work on dead centers at high speed, and avoids the necessity of running head spindle at high speed.



Pivoting Taper. Price, 50c.

Made on the regular .4 c. taper and received by the taper chuck of the lathe. It has two thimbles that press on to a taper for holding the cement, and is similar in operation to cement chuck, watch factory style, but far cheaper.

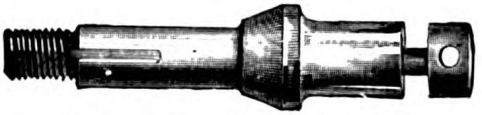


No. 2114. ROUNDING-UP FIXTURE.

Price, including 17 Supporting Collets.....$18 00

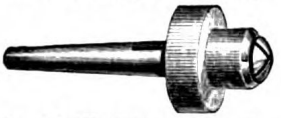
Full Set of Cutters is 50 Round Bottom, 27 Square Bottom, 12 Wolf Tooth, 4 Ratchet.
One-fourth of Full Set is a good number to have.

This is attached to the Slide Rest and holds the wheels as shown in the cut, while the cutter is placed upon the cutter arbor of the lathe. It is a very superior and cheap device and takes the place of the Swiss rounding-up tool.



No. 2135. Saw Arbor. Price, $2.50.

Intended to hold saws and laps. Another size is required for wheel cutters and rounding-up cutters, Price, $3.00.



No. 2125. Drill Chucks. Price, 75c.

One with large and one with small nut. The small nut gives sufficient grip for all small drills; the large nut gives a firmer, stronger grip for large drills up to 2. mm. They are practical manufacturing chucks, and possess many advantages over most of those in general use.

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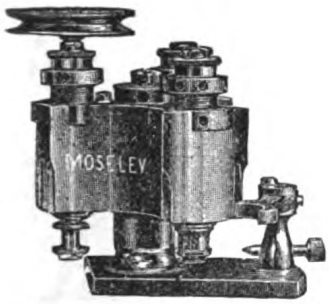
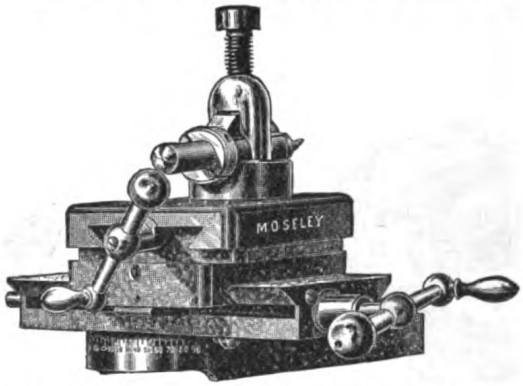
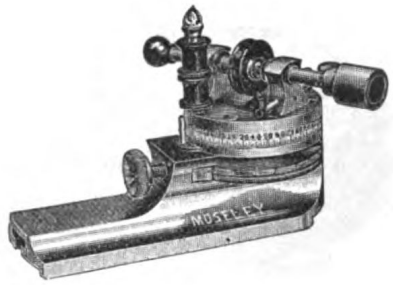
TOOLS L.
LATHE ATTACHMENTS.



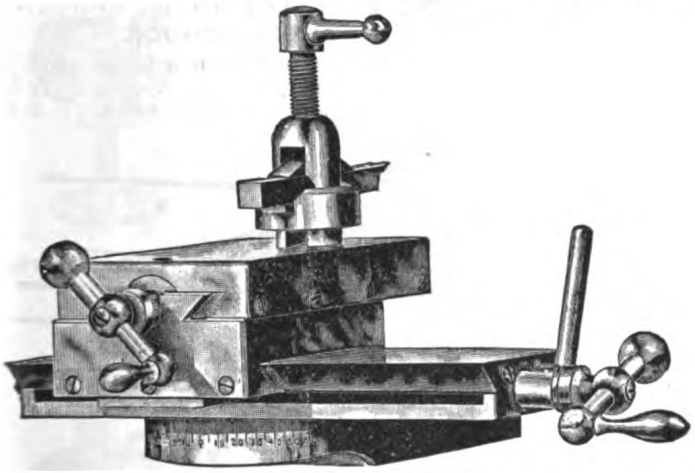
MOSELEY. STYLE 2.
Wheel and Pinion Cutter.
For price, see 2019 to 2022, page 128.



NO. 1999. MOSELEY SLIDE RESTS.
Fastened to bed on Sliding Shoe and Nut beneath.
Price.....$40 00
See Nos. 1999 and 2000, page 128.



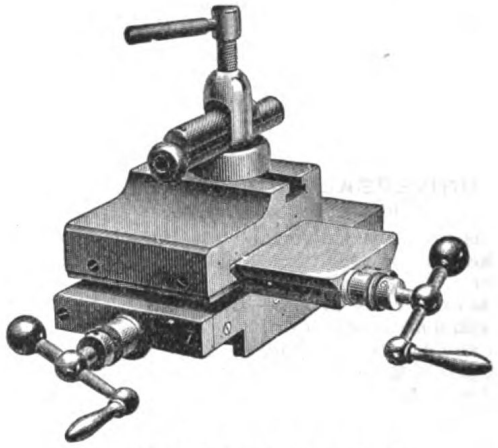
NO. 2007. MOSELEY PIVOT POLISHER.
Price.....$42 00
See No. 2007, page 128.



LOCLE SLIDE REST.

This Slide Rest will interchange with the Genuine Moseley Lathe. Is warranted to be superior in style, finish, workmanship and accuracy of any rest made.

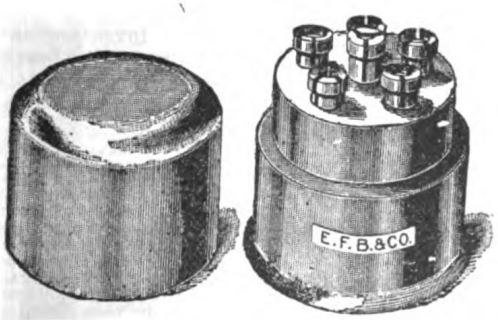
No. 2252. Price of Slide Rest, No. 1x2.....$ 9 00
No. 2253. Slide Rest for No. 2 Moseley. Price..... 13 50



COLUMBIA SLIDE REST.

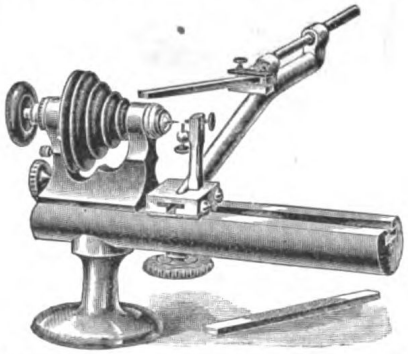
These Slide Rests will interchange with the Whitcomb 1½ and Webster-Whitcomb Lathes, and are warranted to be superior in style, finish, workmanship and accuracy of any Rest made. In ordering, please send Chuck, or state if for Whitcomb or for Webster-Whitcomb Lathe wanted.

No. 2254. Price of Slide Rest.....$13 50
No. 2255. Genuine Webster-Whitcomb. Price, 32 00



NO. 2256. PERFECTION JEWEL CHUCKS.
In ordering state name and size of lathe.

Price, per set of 6.....$4 00



NO. 2257. WIG WAG PIVOT POLISHER.

Hardinge Improved Patent Hand Wig Wag and Pivot Polisher, fitted to all standard lathes.
Price, with one pure bell metal slip and one iron slip...$4 50
State name and size of Lathe when ordering.

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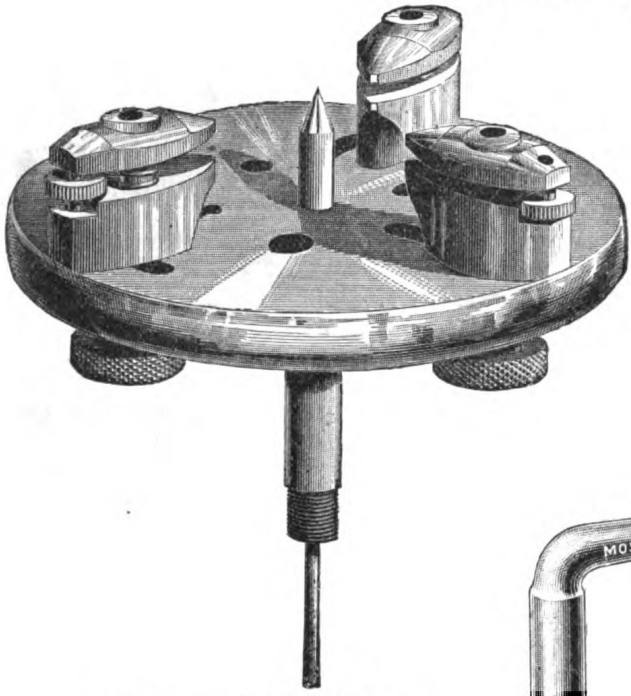
TOOLS L.

LATHE ATTACHMENTS.



UNIVERSAL FACE PLATES.

WARRANTED FIRST CLASS.

It is the only Universal Face Plate in the market having a hardened chuck and pump center.

It is excellently finished and nickel-plated, and can not get out of order. We have these to fit any American Lathe.

In ordering please send chuck, or state what size and make of lathe.

No. 2259. Price.....each, $8 00
" 2260. Imported..... " 7 50

NO. 2261. THE SNYDER PATENT BEZEL CHUCK.

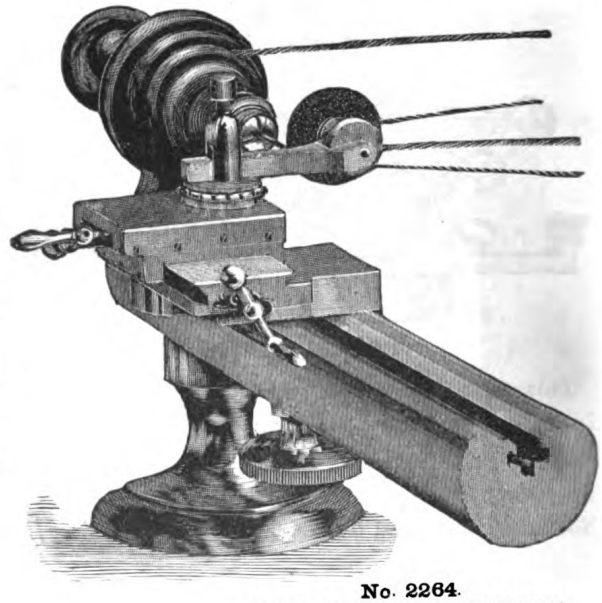
Price, fitted to Whitcomb Lathe...$12 75
" Unmounted..... ..... 12 00
Fitting to any other lathe, extra.... 2 50

No. 2265.

MOSELEY NEW L REST.

To use with the Universal Face Plate, gets right where you want it, prevents accidents. They are made to fit the best American lathes.

Price.....$0 75



No. 2264.

HOUGHTON'S GRINDER.

The latest invention in watchmakers' tools. The bearings are hardened and ground. It is warranted in every way, and it will fit all slide rests.

Price.....$5 00

No. 2262.

MOSELEY NEW BEZEL CHUCK.

Mounted and ready for use, a Bezel chuck seems almost indispensable for the watch repairer; the price is reasonable, and it does the work.

Price.....$8 00

No. 2265½.

HARDINGE PIVOT POLISHER.

Hardinge's Pivot Polisher is made first-class and an entirely new design, and is fitted to any lathe without extra charge. Idler Pulley goes with it, being attached to Polisher, and is adjustable to length of belt, etc., hardened spindle and bearings, made of steel throughout, and has a micrometer feed on spindle reading to 1-3000 part of an inch, making it the most complete appliance for the purpose one could desire.

Price of Pivot Polisher, with Idler Pulley, four Laps, one Taper Point and Case fitted to any lathe.....$25 00

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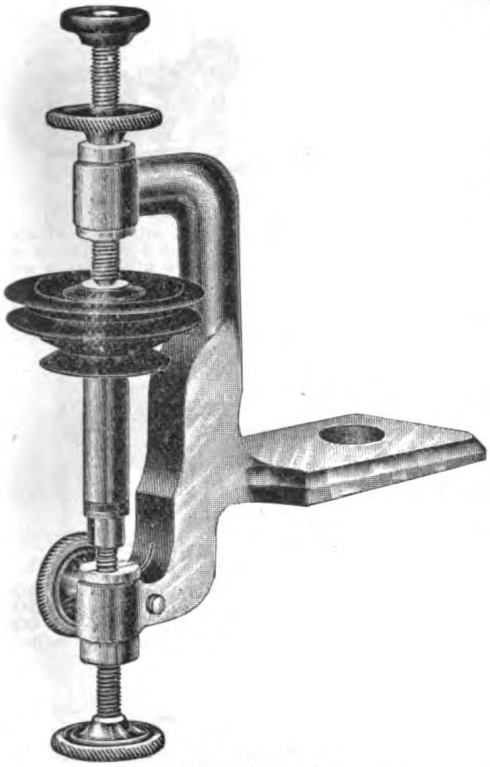
TOOLS L.
LATHE ATTACHMENTS.



NO. 2266.
WHEEL CUTTER AND MILLING TOOL.

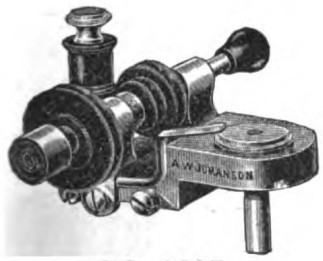
Wheel Cutter and Milling Tool.

Can be used for a great many things besides cutting of Wheels and Pinions. It can be used for milling and making of its own cutter to a great extent. It can be used for making mills of almost any description. The cutter can be raised or lowered as desired, so that escape wheels may be cut if desired. The bearings are hardened and ground to the same angle.

It is warranted in every way and it is guaranteed to do the work perfectly. Is fastened to the slide rest as shown in cut, and will cut wheels up to 6 inches. Anyone having had experience in wheel cutting or can use any wheel cutter or milling tool can use this, and anyone who has any mechanical skill in handling tools can use this milling fixture.

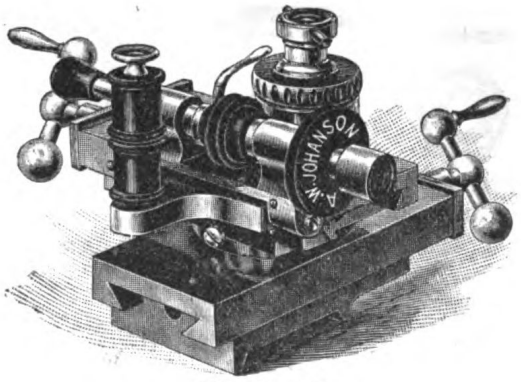
They will fit Moseley and Whitcomb Lathes or most any American Lathe.

Price.....$5 50
" Fly Cutters to cut any Brass Wheel.....each, 25
" Milling Cutters..... each, 50 to 75
" Fly Cutter, Arbor, extra..... 1 50



NO. 2267.
PIVOT POLISHER.

CUTTERS AND LAPS.



NO. 2268.
TOOL ON THE SLIDE REST.

JOHANSON'S IMPROVED PIVOT POLISHER.

Latest, simplest and best, can be changed from hand rest to slide rest, or vice versa in five seconds.

This machine is made to fit all makes of slide rests now on the market, and will be found the quickest, cheapest and best device for milling, snailing, spotting, drilling and recessing for jewel screw heads, etc., as it has fewer parts and is more readily and perfectly adjusted than any other, thus permitting more work to be accomplished in a better manner than by any other means.

No. 2267. Price, Pivot Polisher, Cutters and Laps.....$20 00
No. 2268. " Pivot Polisher and Slide Rest, as shown on cut No. 4037..... 38 00

State make of slide rest or lathe wanted for.

NO. 2269. DEAD CENTER WHIRL.

Drives work on dead centers at high speed, and avoids the necessity of running head spindle at high speed. State make and size of Lathe.

Price.....$1 50

NO. 2270. PENDANT BOW BEVELING TOOL.

For use in any American Lathe. Fits No. 40 wire chuck.

Price.....$0 50

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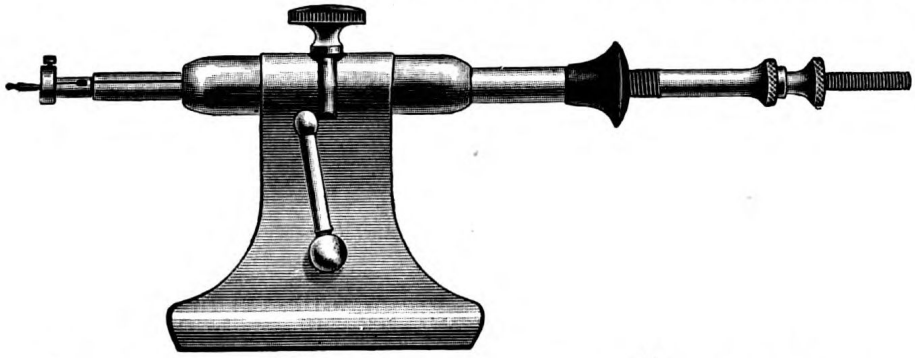
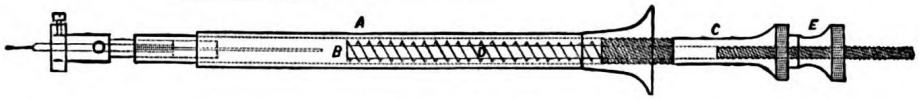
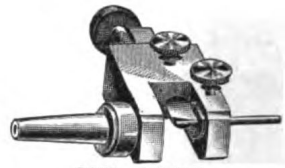
TOOLS L.
LATHE ATTACHMENTS.





NO. 2271.
CAXTON'S PATENT DRILLING ATTACHMENT FOR WATCHMAKER'S LATHE.

Any watchmaker will be able to see at a glance how this tool is to be used in his lathe. It will hold the regular finished pivot drills, and the pressure can be regulated to any desired amount, from 0 to 6 lbs., by the screw "C." They are made in sizes to fit Whitcomb, Moseley, Hopkins and Rivett lathe. Directions with each tool. Price, $5.00

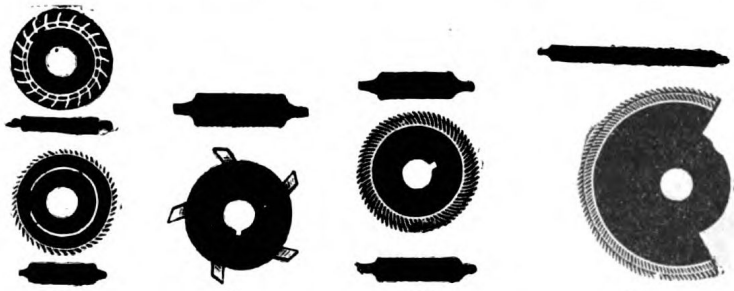


NO. 2272.

Box Tool to fit any Tail Stock Spindle. It is used for turning a number of articles alike, such as screws, pivot drills, punches, etc. Be sure and send sample taper when ordering.
Price $3 00

METAL LAPS.

No. 2273 Copper Laps charged with diamond powder $2 50
" 2274 Copper Laps.. .... 1 50
" 2275 Tin Laps 1 00
When ordering state make of lathe.

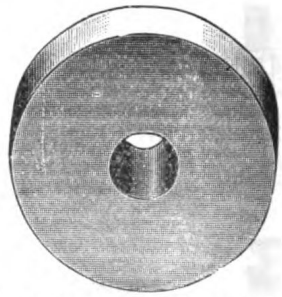


ROUNDING-UP AND GEAR CUTTERS.

No. 2276	Rounding-Up Clock.....	"A"	each,	$1 50
" 2277	" " Watch.....	"A"	"	1 00
" 2278	Cutting and Rounding.....	"B"	"	1 00
" 2279	Five Tooth Cutter.....	"C"	"	2 00
" 2280	One " "	"C"	"	1 00
" 2281	Pinion Cutters.....	"D"	per pair,	1 50

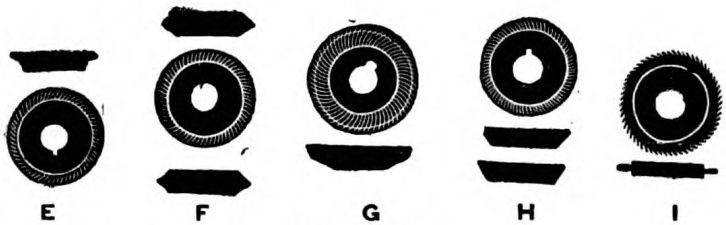
NO. 2291 DALE WIRE CHUCK HOLDER.

Price .$1 00
In ordering state size and make of chuck.



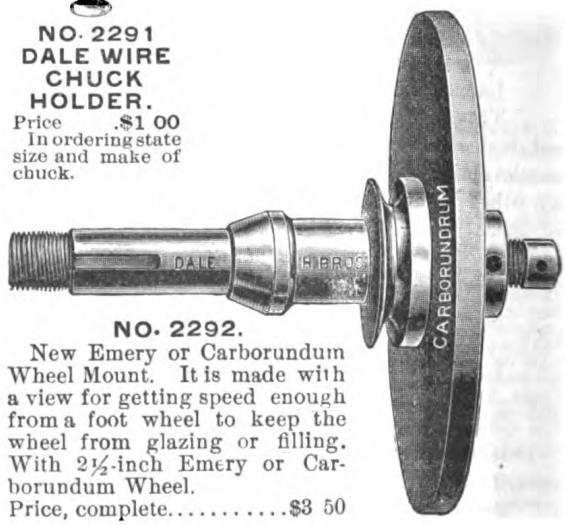
BOX-WOOD POLISHING LAPS.

No. 2287	Size 1x¼	each,	20c.
" 2288	" 1¼x¼	"	25c.
" 2289	" 1⅜x¼	"	30c.
" 2290	" 1⅝x¼	"	35c.



CUTTERS.

No. 2282	Wolf Tooth.....	"E"	each,	$1 00
" 2283	Ratchet...	"F"	"	50
" 2284	Chro-Escapement.....	"G"	"	2 00
" 2285	Star.....	"H"	"	75
" 2286	Flat or Saw.....	"I"	"	40



NO. 2292.

New Emery or Carborundum Wheel Mount. It is made with a view for getting speed enough from a foot wheel to keep the wheel from glazing or filling. With 2½-inch Emery or Carborundum Wheel.
Price, complete.....$3 50

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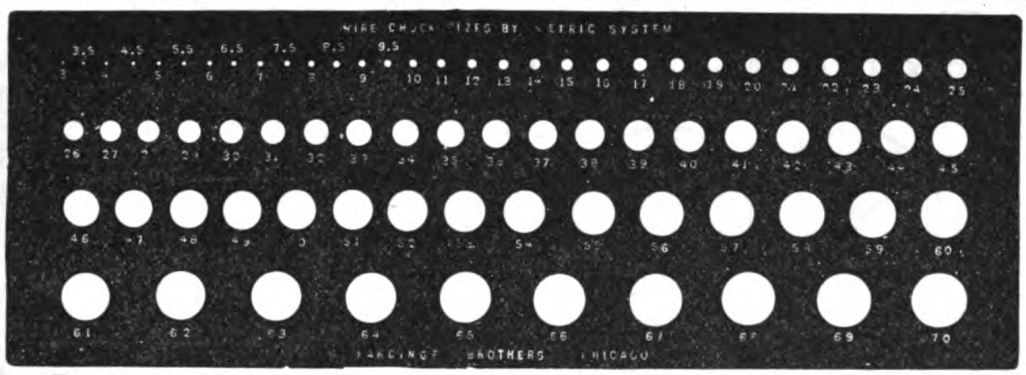
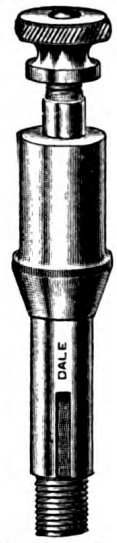
TOOLS L.

THE CELEBRATED DALE TOOLS AND ATTACHMENTS.

Guaranteed by the manufacturers. ☞ NOTICE—Please state name and size of Lathe when ordering chucks.





The above cut gives the exact sizes of our wire chucks, from Nos. 3 to 9½, in full and half sizes, and in full sizes to 70. All orders will be filled by this gauge, except Rivett, unless ordered otherwise. We number Rivett Chucks by Stubbs' gauge, same as manufacturer.

The object in showing these cuts is to enable the workman to ascertain the kind of chuck he has when ordering. If there is any doubt about chuck wanted send old chuck, that fits your lathe, as sample.

NO. 2293. ARBOR CHUCK.
Price ..each, $0 95

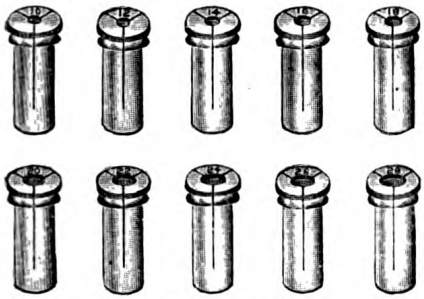
DALE WIRE CHUCKS.

Each, $0 95.

NO. 2294. ARBOR CHUCK.
Price....each, $1 25

Moseley No. 1	Moseley 1x2	Moseley No. 2	Webster Whitcomb	Whitcomb No. 1½	Whitcomb No. 1	Stark No. 1	Stark No. 2	Stark No. 3	Stark E
47	65	65	65	50	36				60

Largest Size Hole Made. Largest Size Hole Made. Largest Size Hole Made.

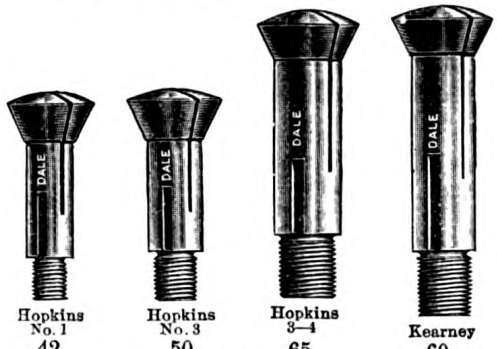


HARDINGE JEWELING CHUCKS.

These chucks are made of brass and are stepped for Jewels, having a range from No. 15 to No. 32; in even numbers, also odd numbers made if desired. They are to be used in a wire chuck, being made in two sizes of body, viz: No. 38 and No. 50. The steps are five sizes larger than holes, so Jewels can be reversed in step.

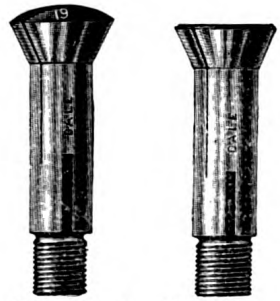
Price, per set of 10 as shown above, $1 50
" Single Chuck..... 20

Made also without steps, for screws, if desired.

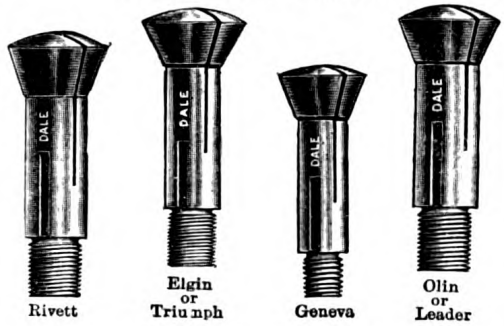


Hopkins No. 1	Hopkins No. 3	Hopkins 3—4	Kearney
42	50	65	60

Largest Size Hole Made.



Round Face. All Sizes. Flat Face. Nos. 3 to 30



Rivett | Elgin or Triumph | Geneva | Olin or Leader

This is the only correctly designed Chuck yet produced. With Dale Chuck like these, in full and half sizes, the finest staff and pinion work can be done. We make them for any Lathe, but carry them in stock for the Webster, Whitcomb and Moseley, 1x2 and No. 2 only. We make the flat face from 3 to 30 full and half sizes. Any of these chucks will be made flat faced if ordered from Nos. 3 to 30, and in Moseley No. 2 any number. We only send flat faced chucks when asked for, and are never stepped. We make steps for Jewels in any kind of chuck when ordered. Nos. 10 to 20 (our gauge) stepped takes in all American Set Jewels.

Price.....each, $0 95

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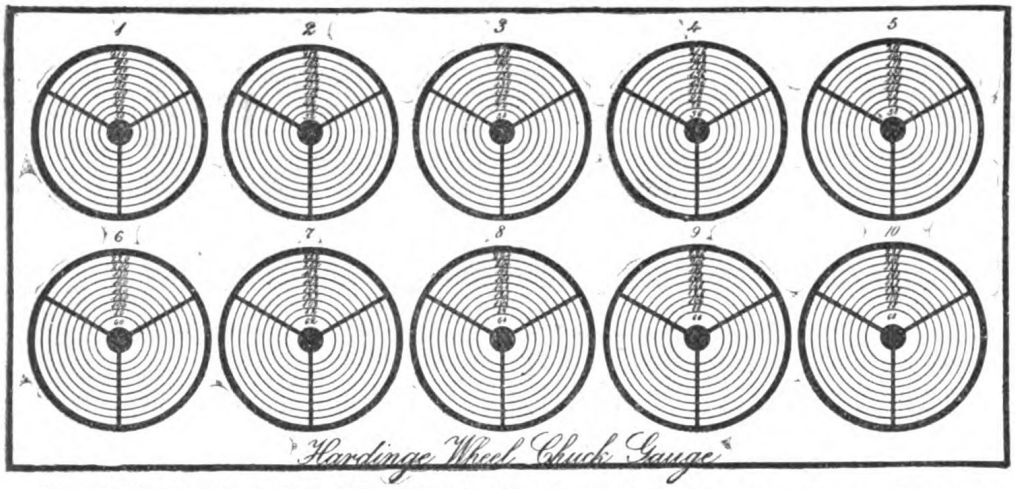
TOOLS L.

The Celebrated "Dale" Tools and Attachments.

GUARANTEED BY MANUFACTURERS. **NOTE.—Please state name and size of Lathe when ordering Chucks.**



Steel makes by far the best Wheel Chuck, therefore we have discarded Brass. In ordering, state if you want Wheel Chucks, numbered by our gauge, 1 to 10. Nos. 2, 4, 6, 8, 10 are half sizes.

NO. 4390.
Price, each $0 95
Old sets of 5 re-stepped and warranted right to size.
Price.....$2 00

CROWN CHUCKS.

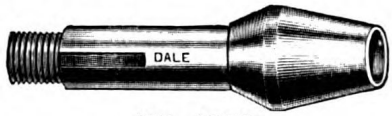
No.		
4380	Single Chuck	$ 1 00
4381	Set of 6	5 00
4382	Set of 8	6 50
4383	Set of 14	10 00

TO FIT ANY LATHE.

Our Crown Chucks are made of fine bar steel, in fourteen sizes, and numbered as follows: 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125; 60 being the smallest and 125 the largest. With a full set you can hold all sizes of crowns, from the smallest Swiss to the largest American. They will be found a great convenience in fitting crowns.

NO. 4393.
WORK CARRIER.
No. 2. Price.....75c.

NO. 4385
Taper Chuck, Hard. Each ..$1 50



NO 4390.
Screw Chuck. Any kind. Each..95c.
Made to fit any lathe.

NO. 4394.
Cement Brasses. 1 in. Each 25c.
2 in. Each.....50c.

NO. 4397.
TRUE TAPER CHUCK AND FACE PLATE.
Price $3 00

NO. 4386.
Brass or Steel Taper Blanks, same size as cut. Each.. ..... 8c.
Per dozen .....75c.

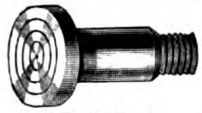
NO. 4387.
Hard Female Centers, Ground on dead centers. Each .....50c.
Ordinary Female Centers. Each, 20c.

NO. 4391.
Cut full size. Taper Chuck and Face Plate. Made to fit any American Lathe. Complete as shown above.
Price.....$2 50

NO 4395.
¾ in. Each.....20c.

NO. 4388.
Hard Tapers, Finished. Each..25c.

NO. 4389
Taper Blanks, Steel. Each, ¼ in., 20c; ⅜ in., 30c. Brass. Each, ¼ in., 15c.; ⅜ in., 20c.; ½ in., 25c.



NO. 4396.
⅛ in. Each .....15c.
¼ in. Each.. ....5c.

NO. 4398.
Soft Taper Chuck, with one Soft Taper. Each ....95c.

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TOOLS L.

The Celebrated Dale Chucks, Tools, and Attachments. Guaranteed by Manufacturers.
NOTICE.—Please state Name and Size of Lathe when ordering Chucks.

NO. 4399. CYLINDER WIRE CHUCK.

This Chuck fills a long-felt want. The cut shows sectional view of our Cylinder Wire Chuck for turning lower pivot on cylinder without wax. It is very convenient and turns pivot true with cylinder. Nos. 9, 10, 11 and 12 take all sizes, and same chucks can also be used for staff work

Price, each, with placing rod.....$1 25

NO. 4400. WAX OR CEMENT CHUCK, WITH SLIDING SLEEVE.

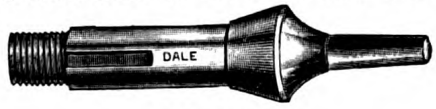
This Wax Chuck is made with the addition of a loose sleeve, which can be moved up to the body of the work, and holds the wax to the piece being operated on much more firmly. Where wax must be used it will be found a great improvement.

Price.....$1 00

NO. 4401. SCREW FINISHING CHUCK.

This Chuck will be found handy and necessary for reducing ends of screws, the heads of which cannot be held in wire chuck.

Price, each, with three caps.....$1 50
Extra caps, 10c. each.



NO. 4402.

Chuck for turning and dressing laps. It is hardened and ground true, and will be trued in any lathe head that is sent to us when ordering. This insures accuracy.

Price, each.....$1 50

NO. 4403. ROLLER CHUCK.

This chuck is designed to take balance, with roller on, having a double hole in face, to admit ruby pin. It is very handy, and is well worth the difference in price, as it performs all the functions of a regular chuck. Nos. 5, 5½, 6, 6½, 7 and 7½ take all balances.

Price, each.....$1 25

Front view of Roller chuck. Enlarged one-half.

NO. 4404. DALE CENTERING TOOL.

For use in Tail Stock Spindle or Taper Chuck. In ordering state what lathe you wish to fit; if not a standard make, send sample taper.

Price.....$0 50

NO. 4405. PIVOT GRINDER AND POLISHING LAP.

Pivot Grinding and Polishing Laps, made of soft steel and pure bell metal, same as our slips.

Price, each.....$0 40

Send sample lap when ordering.

NO. 4406. AUXILIARY BRASS CHUCK.

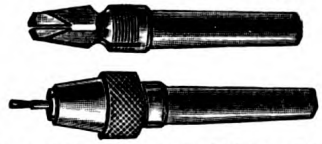
Small Auxiliary Brass Chuck, to fit No. 38 wire chuck. The object of this chuck is to hold screws and not injure the threads.

Price, each, any size, $0 25

NO. 4407. JEWEL PIVOT DRILL CHUCK.

Jewel Pivot Drill Chuck for use in Tail Stock Spindle or Taper Chuck. Made in one size only, No. 10. For sizes see page 145, Wire Chuck Gauge.

Price $0 50



NO. 4408. HARDINGE GEM PIVOT DRILL CHUCK.

This cut shows sectional view of our new Gem Pivot Drill Chuck. It is trued and hardened, and made in sizes Nos. 8 and 10 for every lathe.

Price, each $0 75

NO. 4410. HARDINGE BALANCE CHUCK.

Our Balance Chuck takes the balance with Hair Spring and Roller on, and is the neatest and handiest appliance one can have for adjusting or touching up pivots, after straightening them, and to shorten or reduce a pivot, it is perfection. It takes all the straight arm balances, from 00 size up, and any one can true it dead true in its own place, and it being one solid piece, will stay true.

Price.....$5 00

NO. 4409. JOHANSON'S PIVOT DRILL CHUCK.

The advantage of this Chuck is that you can sharpen your drill without taking it loose from chuck. The drill chuck head is small enough to go through the tail-stock hole.

Price, each...$0 75

NO. 4411. STEPPING DEVICE.

This stepping device enables one to make a perfect step in any chuck. The rod is of steel, with taper hole ground true. We make it plain or with screw, as ordered. The points are hardened and ground all over, with ends polished. Price, rod and sleeve .....$1 00 Points, each.....$0 25

No. 4412. Complete set, in case, eleven points in all, viz., from No. 19 to No. 29, for.....$3 00

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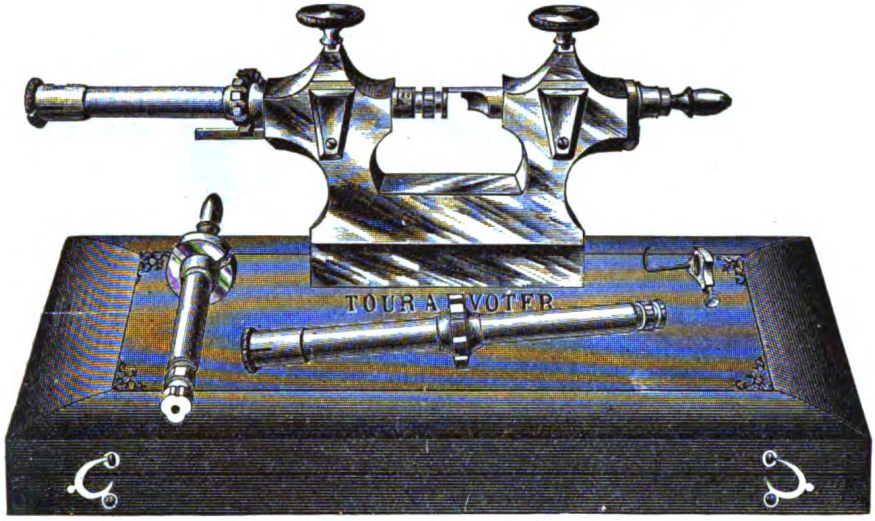
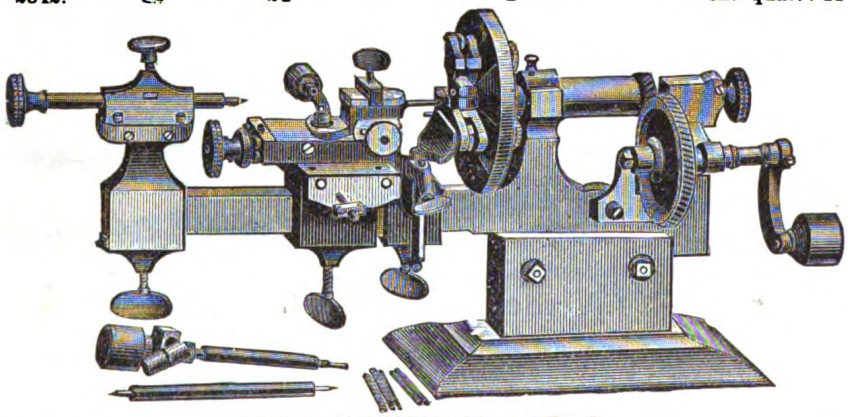
TOOLS L.



Cut about one-half size.

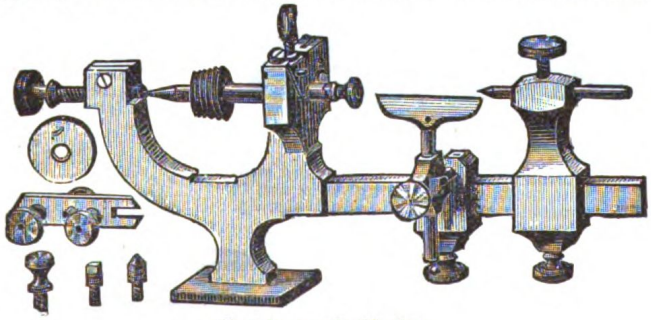
JACOT PIVOT LATHE.

								Each.
No. 2331.	With 8 holes and	8	short pivot rests on	2	centers,	in paper box		$2 75
" 2332.	" 8	" 8	"	2	"	best qual. paper box		3 00
" 2333.	" 8	" 8	"	2	"	morocco box		3 25
" 2334.	" 8	" 8	"	2	"	best qual. mor. box.		4 00
" 2335.	" 12	" 12	"	3	"	morocco box		4 25
" 2336.	" 12	" 12	"	3	"	"	best qual	5 25
" 2337.	" 12	" 12	"	3	"	"	nickel pl.	6 00
" 2338.	" 16	" 16	"	4	"	"		5 75
" 2339.	" 16	" 16	"	4	"	"	best qual.	7 00
" 2340.	" 18	" 18	"	4	"	"	ex. qual.	10 50
" 2341.	" 24	" 24	"	4	"	"		7 00
" 2342.	" 24	" 24	"	4	"	"	ex. qual.	11 50



SWISS UNIVERSAL LATHE.

No. 2346. Geared $35 00
" 2347. Side Wheel 38 00



Cut is one-half size.

NO. 2351. SWISS JEWELING LATHE.

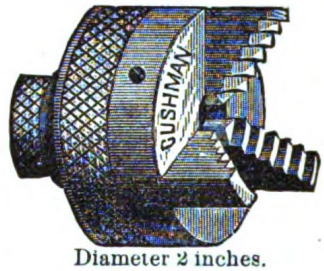
No Back Center $6 50

Parts of any of these lathes can not be duplicated.

Cut is full size.

NO. 2343. BEACH'S LATHE CHUCK.

Holding wire 0 to ⅛ inch.... $8 00
Extra for fitting to Lathe, $2 00, $2 50, $2 75.



Diameter 2 inches.

NO. 2344. JEWELERS' LATHE CHUCK.

This chuck is the same every way as the Peerless Drill Chuck, only the jaws are made especially for watch and clock makers' and repairers' use. Extra pains are taken to have this chuck perfectly fitted and to run true.

Price $4 00
Extra for fitting to Lathe, $2 00, $2 50, $2 75.

NO. 2345. THE PEERLESS.

A new drill chuck, and the best chuck for the price ever put on the market. Holds work from 0 to ½ inch.

Price $4 00
Extra for fitting to Lathe, $2 00, $2 50, $2 75.

NO. 4413. DRILL CHUCK.

A highly-finished forged steel Drill Chuck. It will hold 3-16 inch and smaller drills; is heavily nickel-plated and will fit all Carpenter Lathes and Lathe Heads.

Price $1 00

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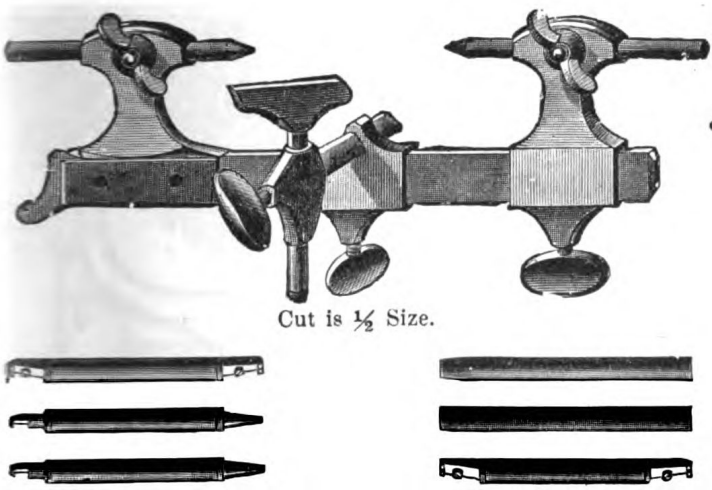
TOOLS L.

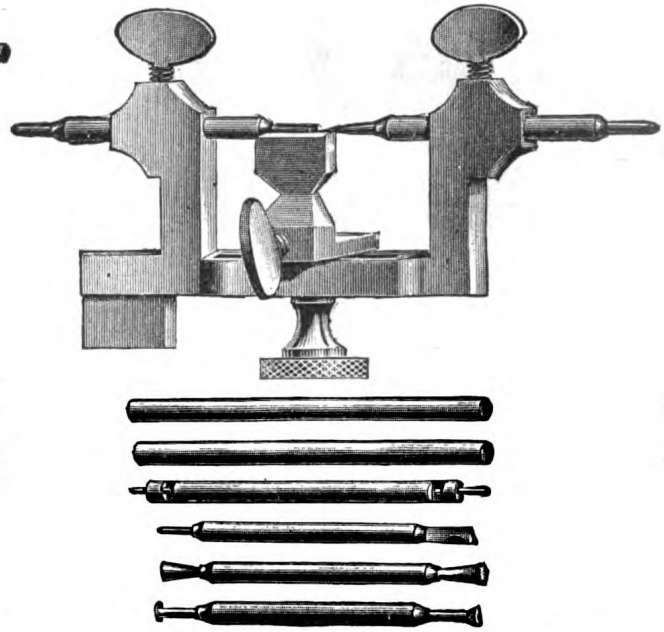


Cut is ½ Size.

STEEL VERGE LATHE.

No. 2353.	Top Screw, as shown,	8 Centers	$3 00
No. 2354.	Side Screw, as cut above,	8 "	3 00
No. 2355.	Extra quality,	10 "	4 75
No. 2356.	New Style, Lever Tightening		4 75
No. 2357.	" " Bronze		5 00

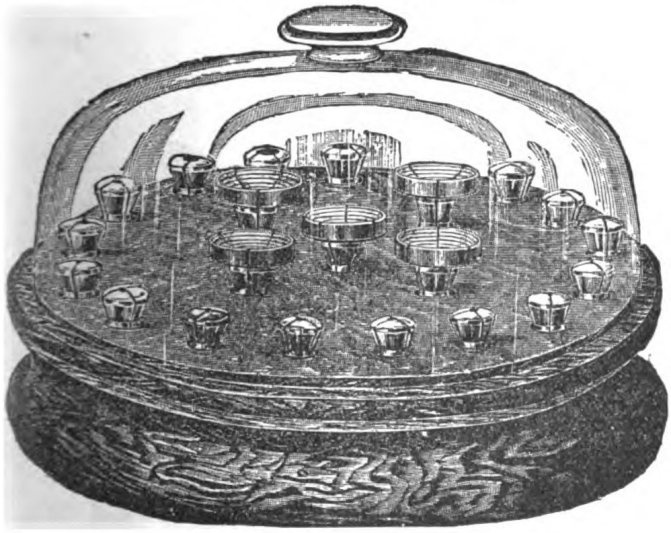
Nickel-plating, extra, $1.25.



No. 2348. STEEL VERGE LATHE.

Cut is ¾ Size.

8 Centers $2 00



PLAIN CHUCK STAND.

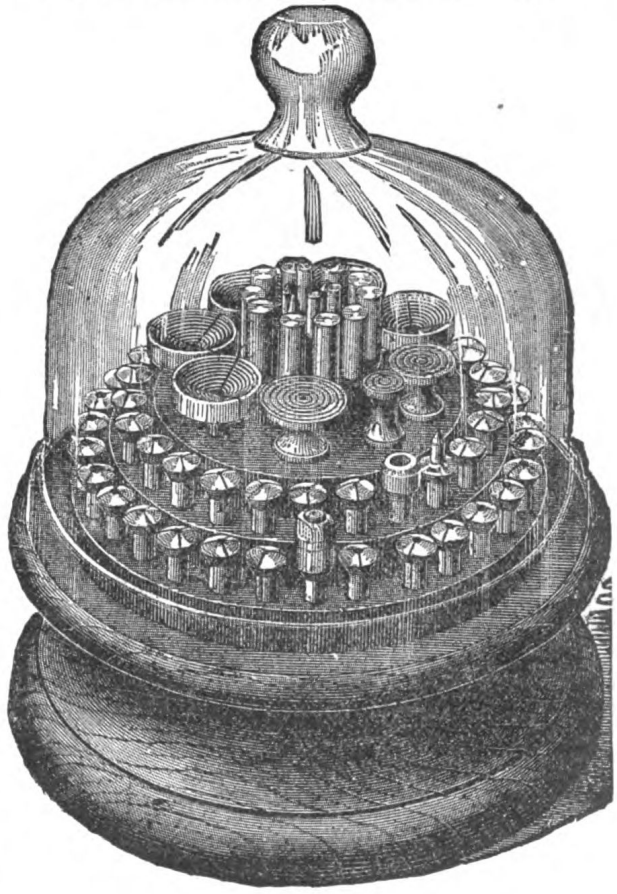
No. 2379.	Price	Each, $1 00
No. 2381.	Without cover	50

In ordering, please state size of Chuck.

No. 2382. Revolving Chuck Stand.

Chuck Stands, made of fine Cherry Wood (without chucks) each $2 00

In ordering, please state size of Chuck.



No. 2382.

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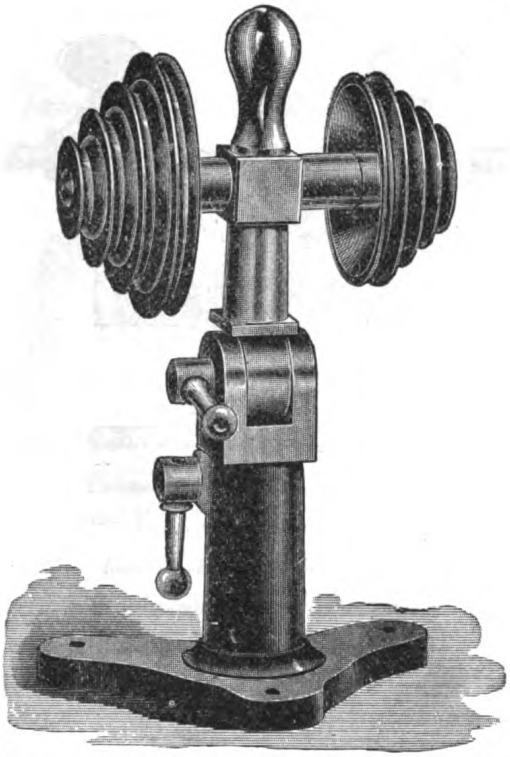
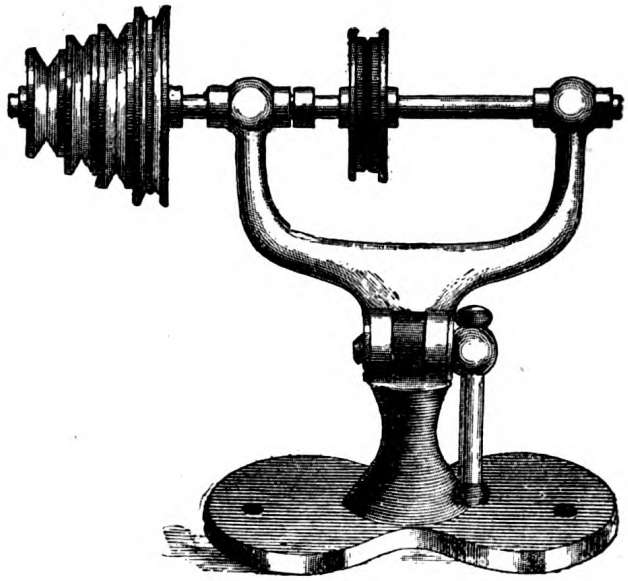
TOOLS L.



ADJUSTABLE COUNTERSHAFT.

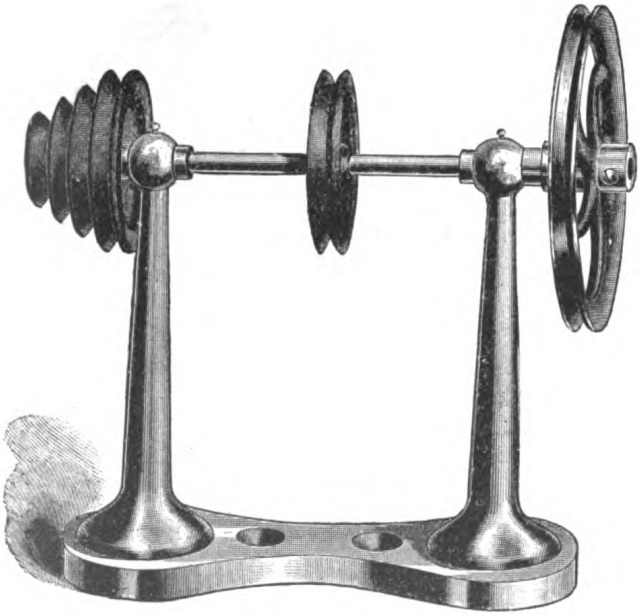
No. 4414. Japanned $3 00
No. 4415. Nickel Plated 4 00



No. 4416. NEW STYLE COUNTERSHAFT.

Nickel-plated pulleys and top and japanned stand, with lever attachment to tighten slack.

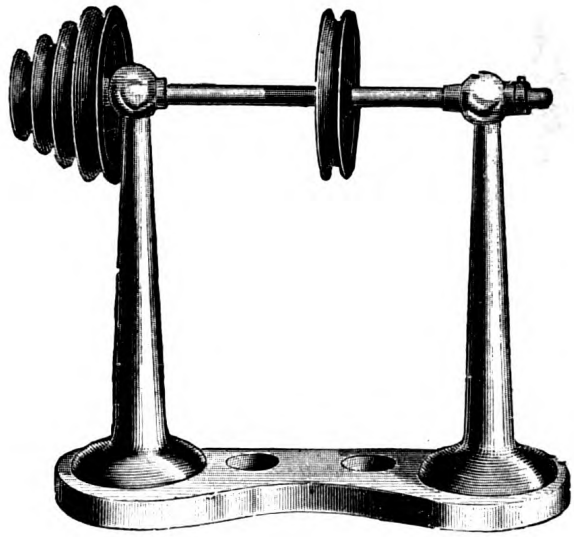
Price $2 50



No. 4417. NEW METAL COUNTERSHAFT.

Handsomely Nickel-plated, with 3½ inch Speed Wheel and Hard Rubber Pulleys.

Price $1 50



NICKEL-PLATED COUNTERSHAFT.

No. 4418. Hard Rubber Pulleys, best quality $1 25
No. 4419. " " " 2nd " 1 00

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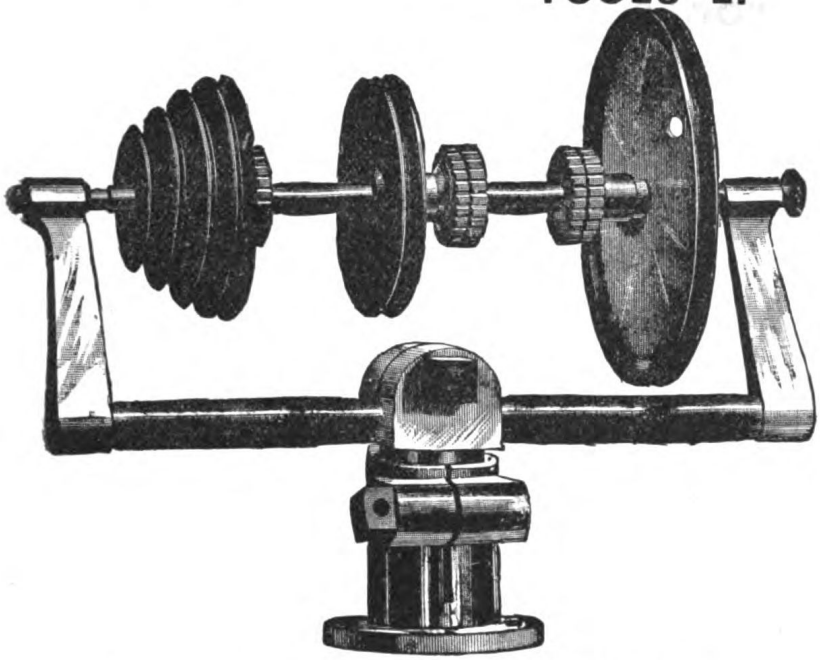
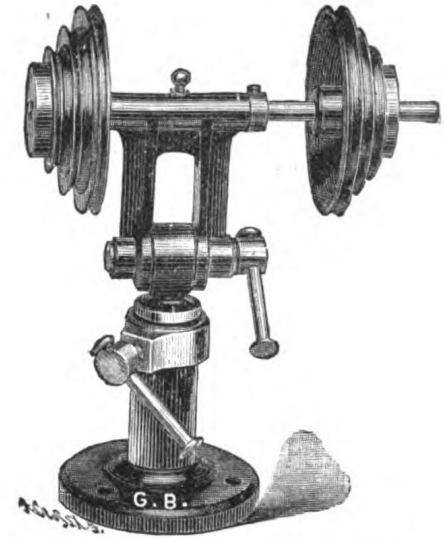
TOOLS L.



BOLEY'S SPEED COUNTERSHAFT.

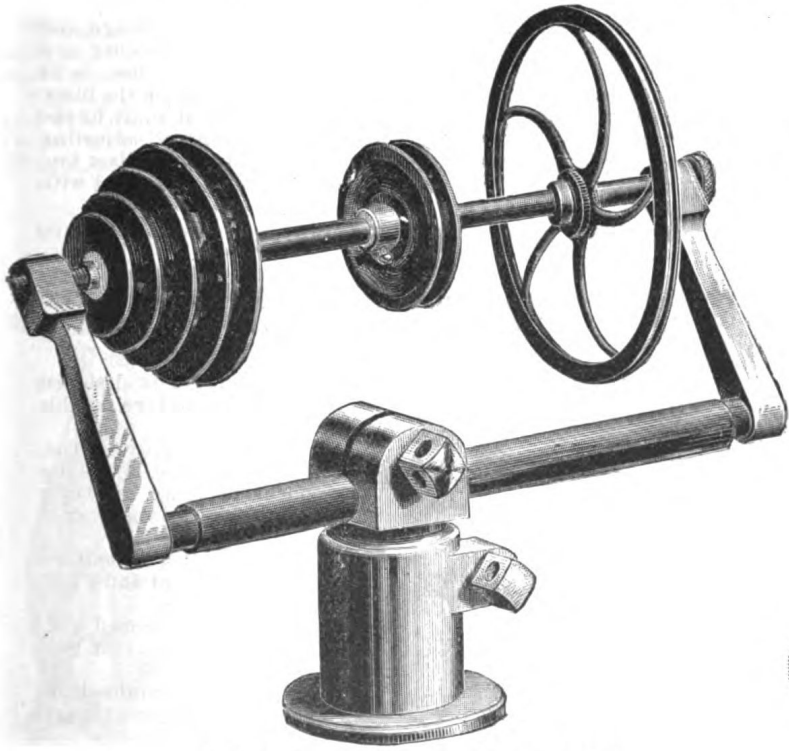
No. 4420. With interchangeable pulleys to regulate speed, two rubber pulleys and one brass speed wheel.

Price $5 50



BOLEY'S COUNTER-SHAFT.

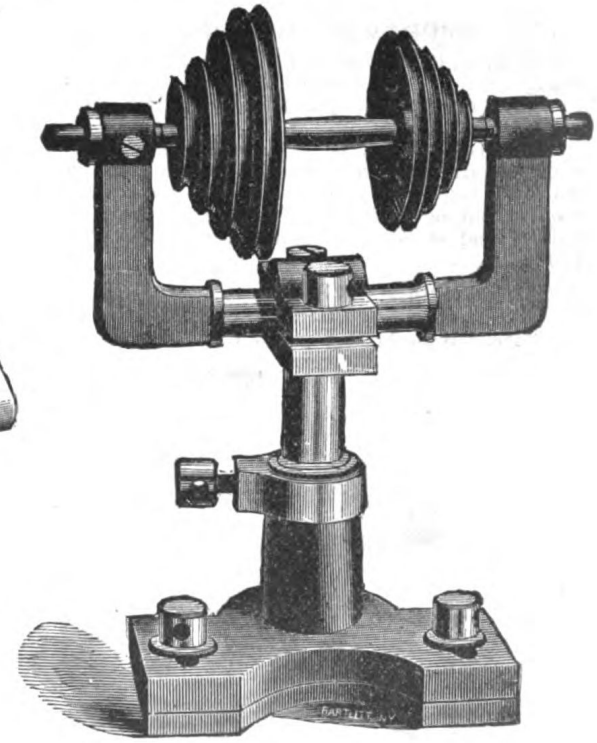
No. 4422. New style, price..... $3.00
No. 4423. Nickel-plated. 4.00



SPEED COUNTERSHAFT.

No. 4421. All nickel speed countershaft, all nickel pulleys, lever tightening.

Price $4 00



COUNTERSHAFT.

No. 4424 Boley's adjustable.....each, $3 00
No. 4425 " nickel-plated, " 4 00

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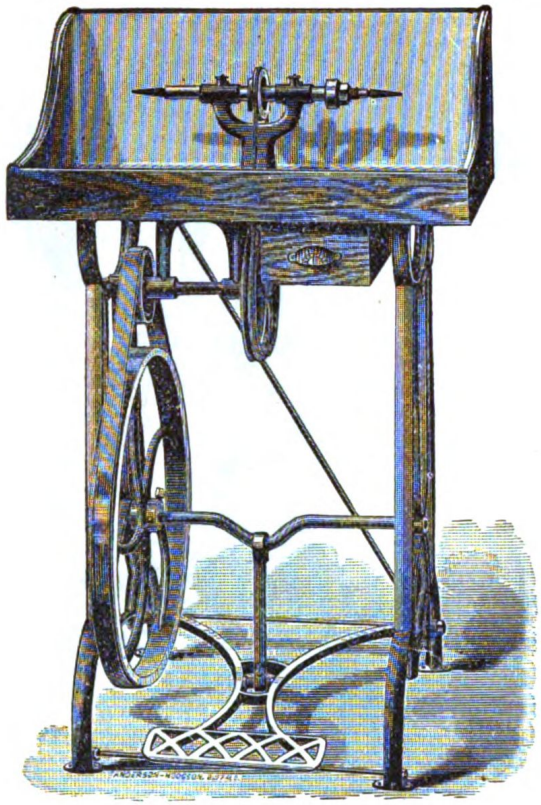
TOOLS L.

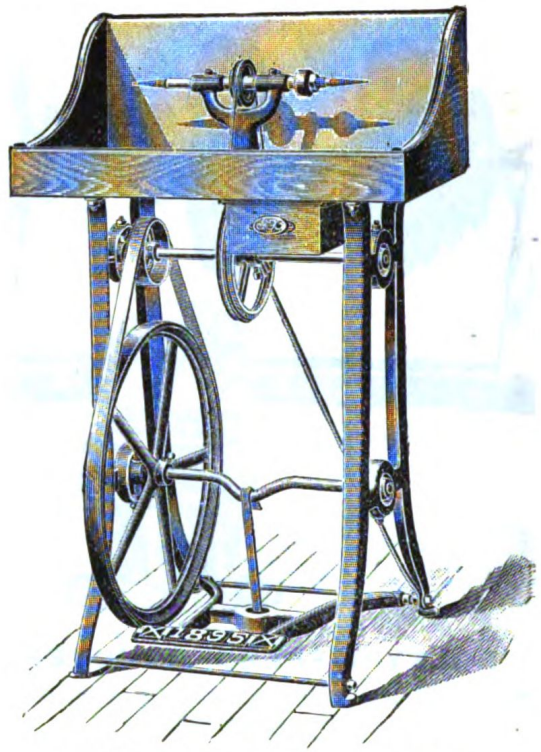


IMPROVED POLISHING LATHE.

The top of this Lathe is of finely seasoned wood, lined with heavy zinc, and well finished throughout. It has iron collars to protect the belt holes, and a large drawer. Both shafts are made of steel.

The driving pulley is 24 inches in diameter, and belts to a countershaft, on which are pulleys five and ten inches in diameter, respectively, by which the great amount of speed required can be produced. It occupies a floor space of 24x30 inches, and stands 40 inches high at the front. Weight, 170 lbs.

No. 2387.	With No. 2 Head	$18 00
" 2388.	With No. 3 Head (as in cut)	20 00
" 2389.	With No. 3 Lap Head	21 00



IMPROVED POLISHING LATHE.

Patent applied for 1895.

This Lathe has been greatly improved, both in design and construction. It occupies a floor space of 21x23 inches, and stands 40 inches high at the front. The driving wheel is 24 inches in diameter and belts to a 5-inch pulley on the intermediate shaft, and from a 10-inch pulley on that shaft to the end. Both shafts are made of steel, and run in self-adjusting babbited boxes, making the alignment perfect. The box top, 15x23, is made of finely seasoned hardwood and lined with heavy zinc.

No. 4429. Price, complete as shown above..... $14 00

NO. 4430. CROCKER'S NEW IMPROVED CONE-JOURNAL LATHE HEAD

FOR DENTISTS OR JEWELERS.

This Lathe Head is designed to meet the demand for a reliable low-priced article.

It is carefully made, runs true, is neat in appearance, and being cone-journaled, can be easily adjusted to take up the wear of usage.

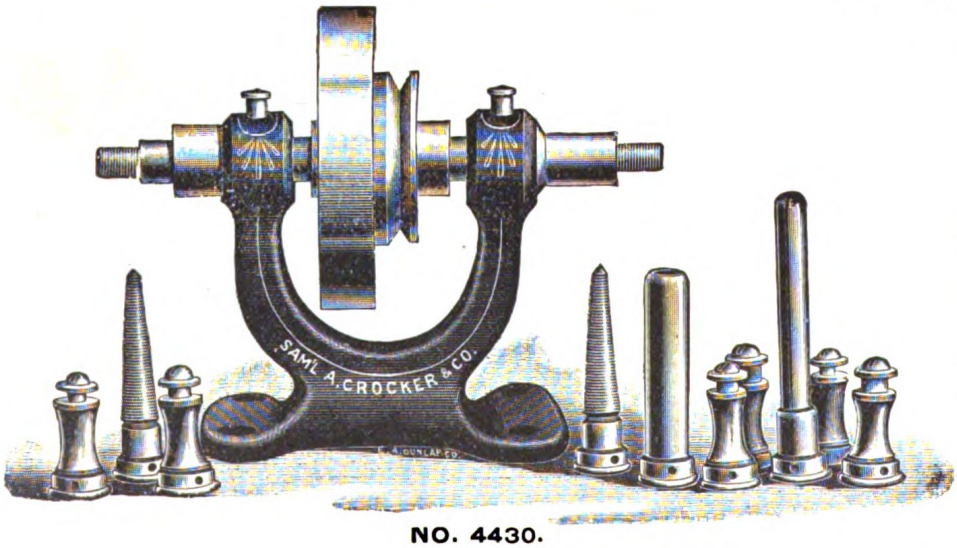
It is supplied with 10 polished brass chucks—7 right and 3 left-handed (as illustrated).

The spindle is hardened steel and accurately fitted to the base and balance wheel.

The base is wrought iron, japanned, and the other parts brightly polished.

The lengthening of the spindle is an improvement which can be appreciated at a glance.

Price, complete.....$9 00
Extra Chucks.....each, 25



NO. 4430.

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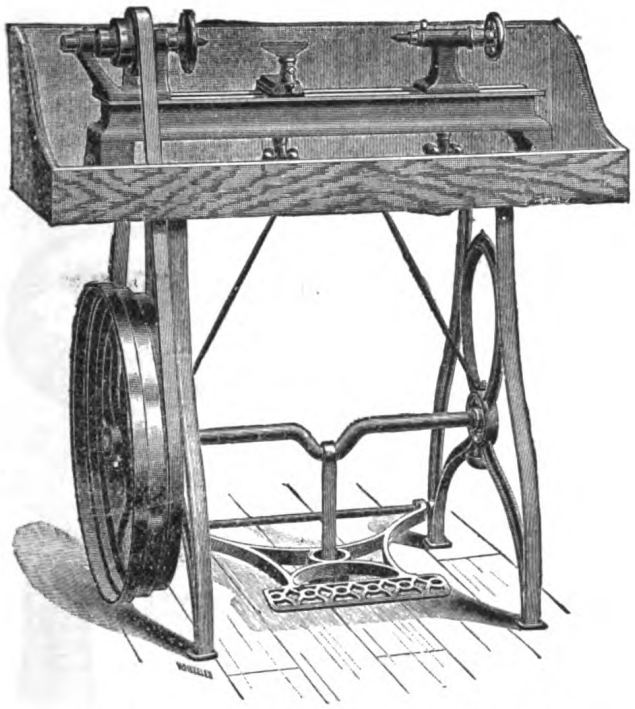
TOOLS L.

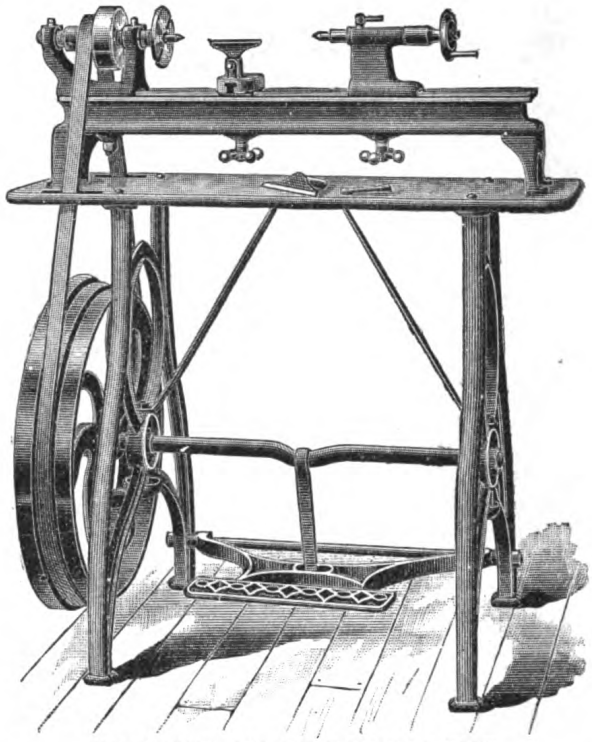


NO. 2401. JEWELERS' FOOT LATHE.

The size, capacity and general outline of this Lathe is the same as 2402, with this exception: in the place of the flat, we introduce the box top.

This top is made of finely seasoned wood, nicely finished, and well lined with heavy zinc; making it most complete for the working jeweler.

Weight, 275 lbs.....$45 00



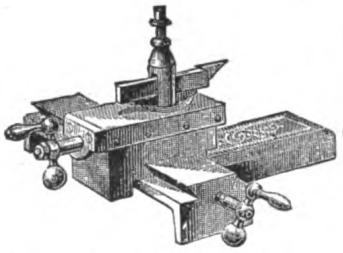
NO. 2402. PLAIN FOOT LATHE.

This lathe has recently been re-designed, and is now far superior to any plain lathe in the market. It has a capacity of 20 inches between centers, a steel spindle in head, with half-inch hole through it. It has two T rests, and a wrench.

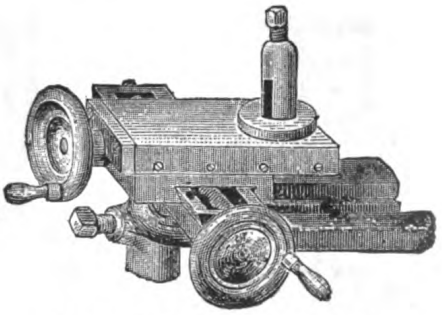
The crank shaft runs in improved adjustable boxes, which insures ease in working.

Length of bed, 3 feet; weight, 250 lbs.....price, $40 00

NO. 2403. THE MONTGOMERY LATHE.



NO. 2405. SLIDE REST.



NO. 2406. SLIDE REST.

No. 2403.	Price of Lathe, mounted	$25 00
" 2404.	" " without bench	15 50
" 2405.	No. 1. Slide Rest for above Lathe	11 00
" 2406.	" 2. " " " " 5 to 6 inch swing	6 00
Slide Rest, Tools 6 to the set, Suitable for above Rests		2 75

Weight of bench, 81 lbs.; length of bed, 24 inches; driving wheel, 22 inches in diameter; 3 grooves for changes of speed.

No. 1, Slide Rest like Lathe is highly finished in all the working parts; is first class in every respect; it is suitable for Lathes, 6 inch swing, has a longitudinal motion of 4 inches and traverse motion of 2 inches.

In ordering Polishing Lathes, give Number, Price and Page.

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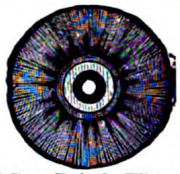
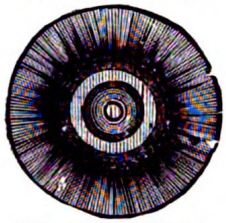

2 Row Bristle Wheel.


3 Row Bristle Wheel.

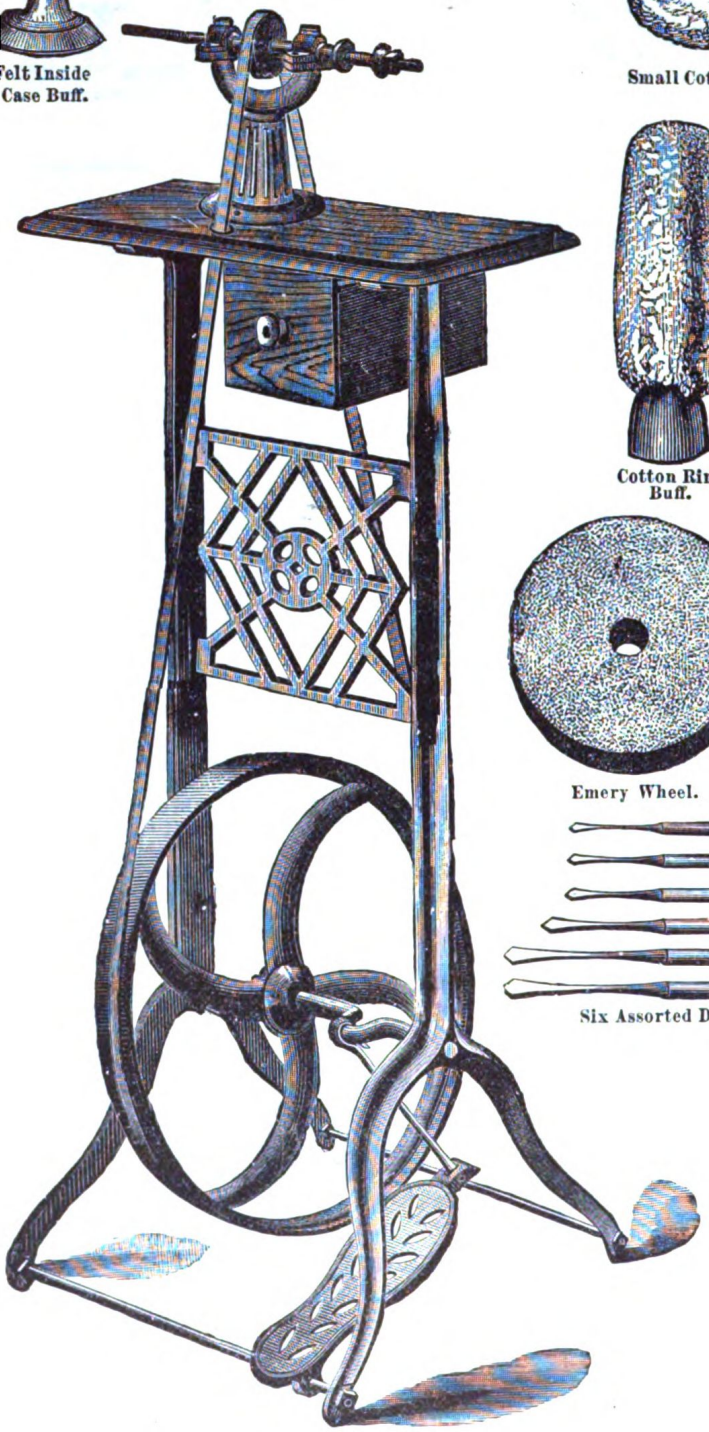
3 Row Bristle Wheel.

4 Row Bristle Wheel.

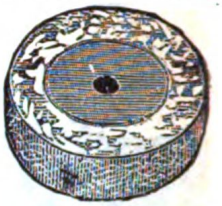
Inside Case Brush.

Cotton Inside Case Buff.

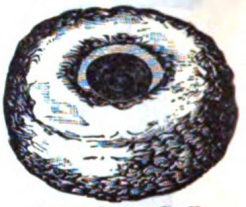
Felt Inside Case Buff.



Small Cotton Buff.


Felt Buff.

Cotton Ring Buff.


Large Cotton Buff.

Emery Wheel.

Felt Ring Buff.

Six Assorted Drills.

Steel Saw.

POLISHING LATHE.

No. 2407. Lathe, without fixture, 1 drawer.....$4 75
" 2408. " with fixture, 1 drawer with 10 Buffs and Brushes. 6 50
" 2409. Extra quality outfit as shown..... 7 50

NOTICE.—We give you extra quality size of Brushes and Buffs in our Best outfit, and include steel saw etc., accompanying Nos. 2409 and 2412 Polishing Lathes.

Small Cuts are one-half size.

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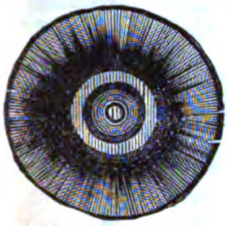
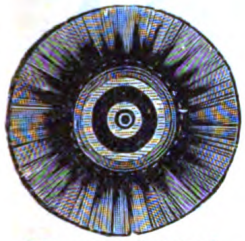
2 Row Bristle Wheel.

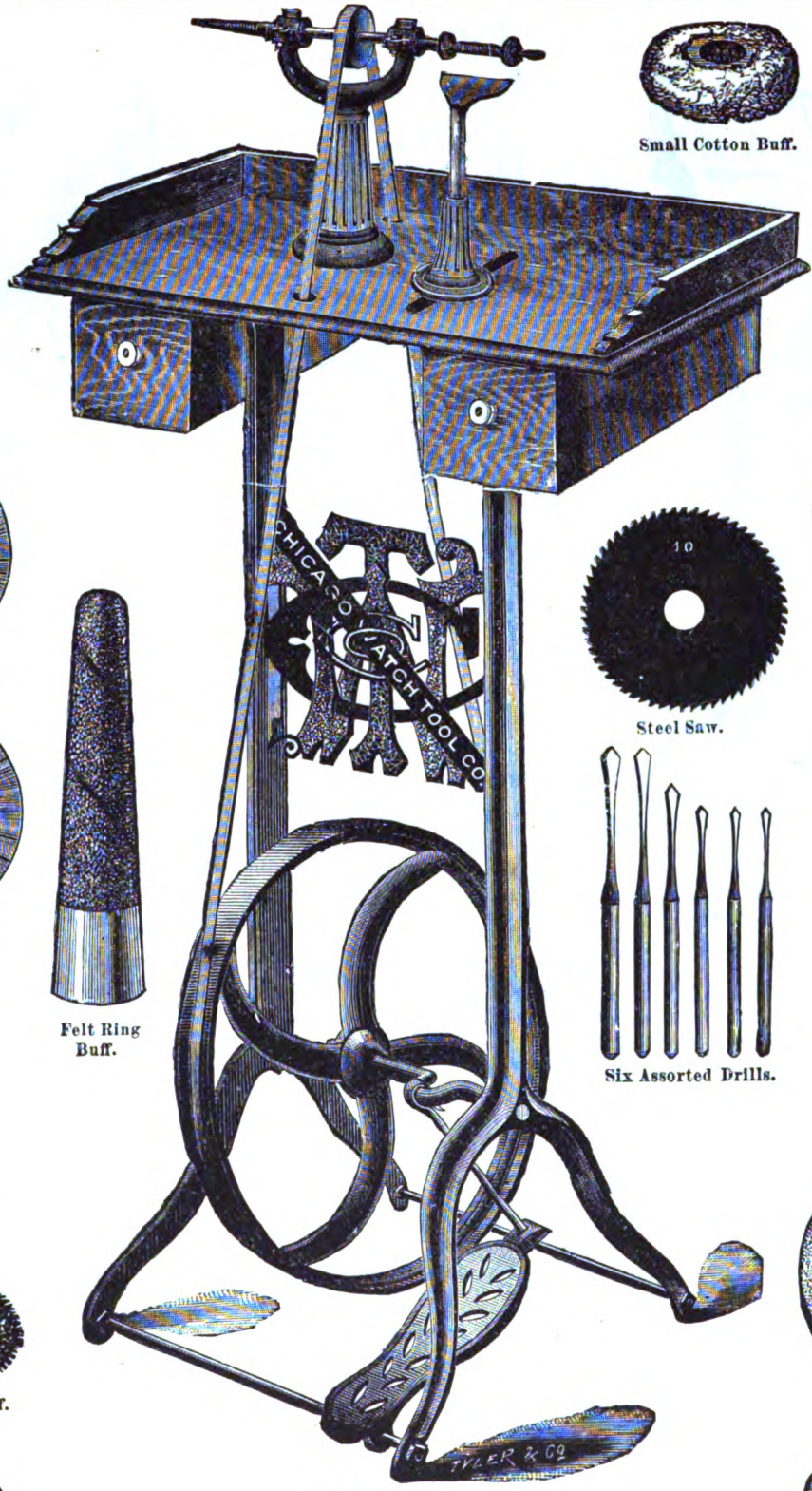

3 Row Bristle Wheel.


3 Row Bristle Wheel.

4 Row Bristle Wheel.

Inside Case Brush.

Cotton Inside Case Buff.



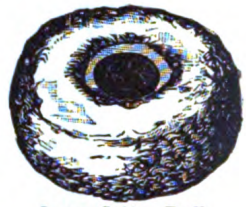
Felt Ring Buff.

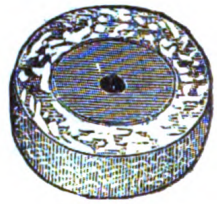
Small Cotton Buff.

Steel Saw.

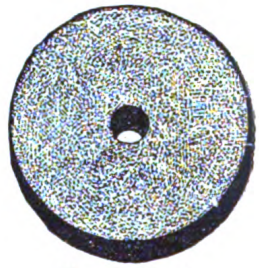
Six Assorted Drills.

Cotton Ring Buff.


Large Cotton Buff.


Felt Buff.

Felt Inside Case Buff.


Emery Wheel.

POLISHING LATHE.

No. 2410	With Large Two-Drawer Table, without hand rest...	$6 00
" 2411.	" " " " " with " " ...	7 00
" 2412.	" " " " " " hand rest and fixture complete as shown here	8 50
" 2412½.	New style heavy frame and wheel, without fix ures,	8 50

Fixtures, $1 85 to $5 00 extra. Price of hand-rest separate, $2 00.
NOTICE.—We give you best quality outfit in Brushes and Buffs.

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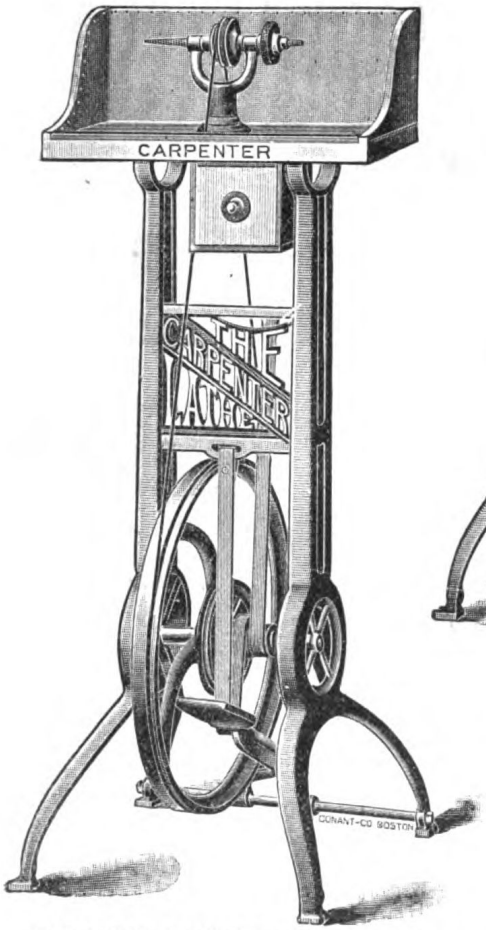
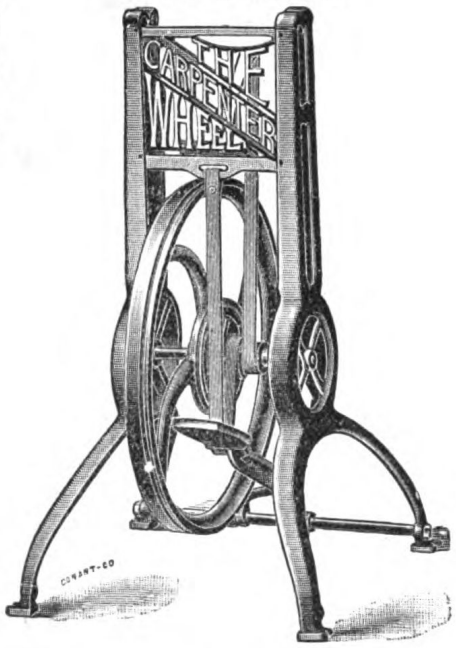
TOOLS L.



THE CARPENTER POLISHING LATHE.

With a very slow tread the spindle revolves over 6,000 times a minute, being more than six times the speed of the ordinary lathe; the wheel starts instantly, always goes the right way, has no dead centre, and can be used with round or flat belting; can be used for hours without tiring the leg or foot.

No. 4426. Price, as shown above, with zinc lined box top.....$16 50
No. 4427. Style 4426, without box top 15 00

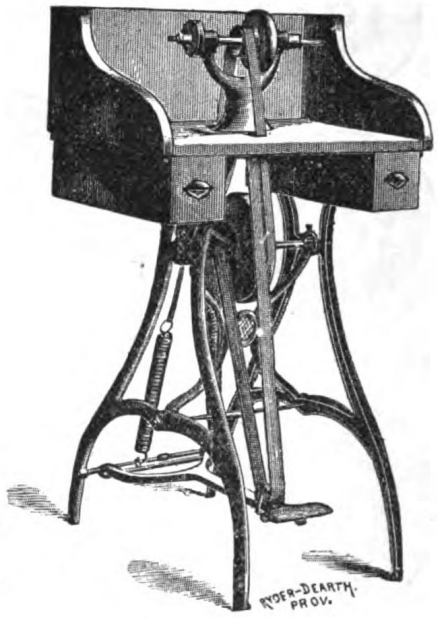


No. 4428.

THE CARPENTER WHEEL, WITH PATENT STEEL BALL CLUTCH.

With a *very slow tread* the spindle revolves over 7,000 times a minute; with such a high speed, the resistance is much greater than in the ordinary slow-going lathe; can be used under any bench; to drive polishing lathe heads, etc. It cannot be used for watchmakers' lathe, as it does not turn backward.

Price.....$14 00



No. 2396.

The heads of these Lathes have solid, conical bronze bearings, arranged for adjustment in case of wear. The spindle has a taper screw on right-hand end for brush wheels, and the chuck that holds the same can be removed, and an ordinary drill chuck attached at a small expense. The other end of the spindle has collars that take any kind of wheel or lap. The spindle is 3 feet 6 inches from floor, the top is 2 feet long by 9 inches high.

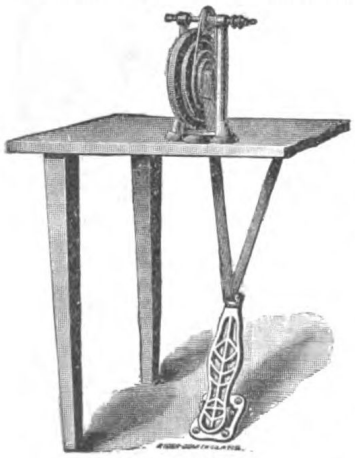
By this improved motion you accumulate more speed than is possible by any other known foot-power. We guarantee that 6,500 or more revolutions can be obtained by these machines.

		Price.
No. 2396.	Two drawers, Japanned and extra finish.....	$20 00
No. 2397.	One drawer, painted with black varnish.....	15 00
No. 2398.	Drill Chuck attached, extra	5 00

No. 2399.

This Lathe is the same as No. 2396, without top and drawers. Where there is poor light they can be used with better advantage without top.

No. 2399. Price.....$12 00
No. 2400. Finished and jap'd, extra 3 00



No. 2391.

No. 2391.
CARPENTERS' IMPROVED POLISHING LATHE.

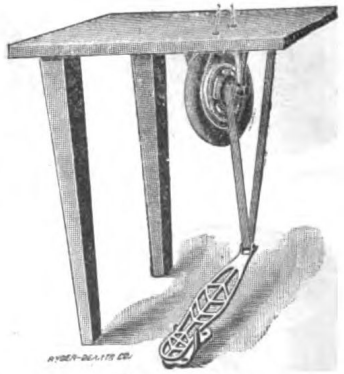
Can be set up on any bench in five minutes, in a space nine inches square. Runs very still, with great power, and is the cheapest and best Lathe in the market.

Price, with iron treadle.....$6 00

No. 2392.
CARPENTERS' PATENT MOTOR.

It can be but up under any bench or table.

Price, with Iron Treadle.....$5 00
" with adjustable Chuck, extra..... 1 00



No. 2392.

☞ In ordering Polishing Lathes, please give Number, Price and Page.

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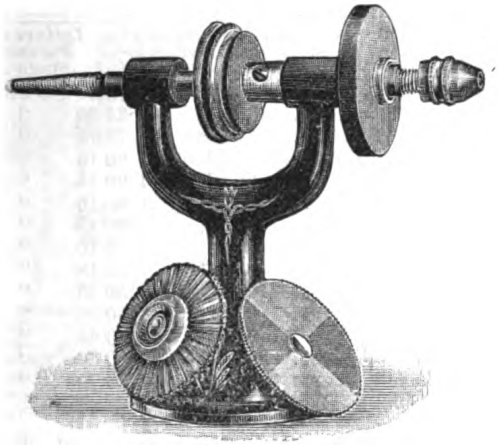
TOOLS L.



POLISHING HEADS

No. 4431. With Split Chuck.....$1 20
No. 4432. With Emery Wheel, Brush and Saw..... 2 00

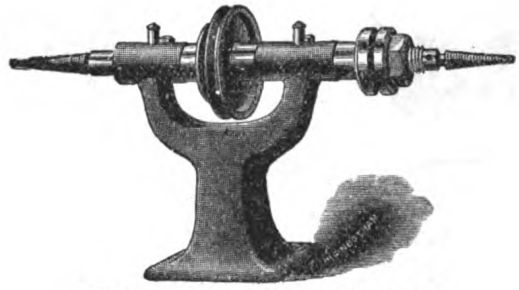
POLISHING HEADS.

Pulley, Flat or Grooved. Stand Japanned and Ornamented.

No. 2416. Length of Spindle, 8 in.....$1 00
No. 2417. " " 9½ in..... 1 25

NO. 2414. POLISHING HEAD.

Price.....$1 00



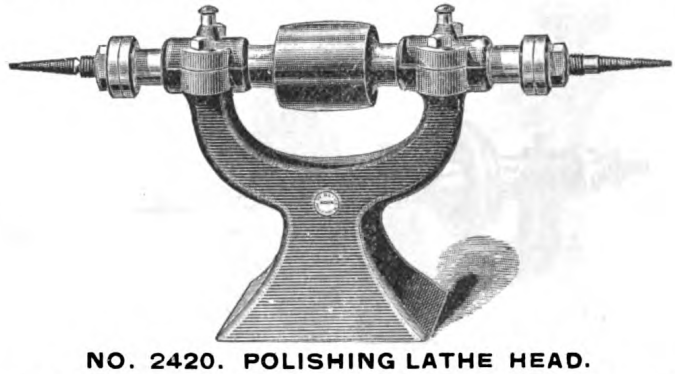
POLISHING LATHE HEADS.

No. 2418. Height, 6 inches; Length of Spindle, 13 inches.

Price.....$4 00

No. 2419. Height, 7 inches; Length of Spindle, 18 inches. This head is "*our best*." It is well proportioned, has long bearing surfaces, and a ground spindle. For power, we build with single flat pulley, or tight and loose pulleys.

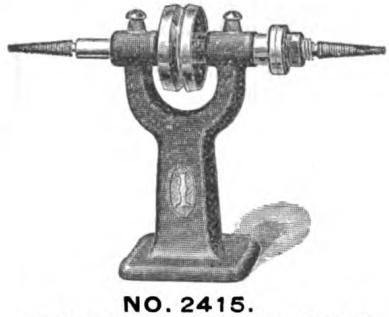
Price.....$7 00



NO. 2420. POLISHING LATHE HEAD.

Height, 9 inches; Length of Spindle, 22 inches; Weight, 25 lbs. This is a strong and well built head. The spindle is ground perfectly true, and has babbitted boxes. Built with tight and loose pulleys if ordered.

Price, for power.....$12 00

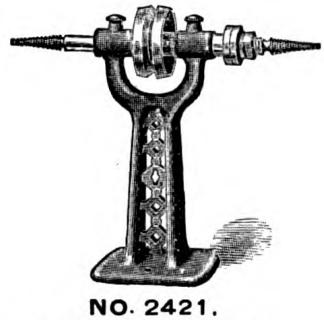


NO. 2415.
POLISHING LATHE HEAD.

Height, 6 inches, with steel spindle 10 inches long and ½ inch in diameter.

Price.....$2 00

This head is constructed in the same manner as the No. 2421, but is much heavier, and has wider bearing surfaces.



NO. 2421.
POLISHING HEAD.

Height, 6 inches; Spindle, 8 inches long.

Price.....$1 00

Please give number, price and page when ordering polishing heads. For polishing and lap head, see also page 156

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TOOLS L.

LADLES WITH DETACHABLE HANDLES.

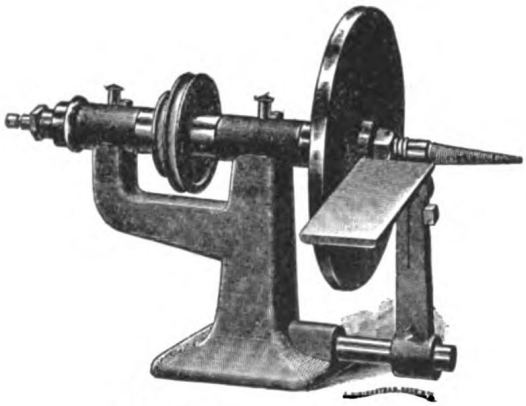
For use with No. 14 Ladle Furnace; of cast iron, in three sizes, 4½x2¾, 4⅜x2¾, 4x2⅜, inside measurement. One handle will fit any ladle, and can be removed while it is on the fire. The prices of ladles and handles are therefore given separately.

No. 2422.	Ladle 4½x2¾	each,	$0 40
" 2423.	" 4⅜x2¾	"	35
" 2424.	" 4 x2⅜	"	25
" 2425.	Handles	"	25

AMERICAN LETTERS AND FIGURES.

SIZE. NO.	INCH.	FIGURES PER SET OF 9.	LETTERS PER SET OF 28. NO.		Letters or Figures Single.
2428	1-32	$0 85	2442	$2 75	20 cts each.
2429	1-20	75	2443	2 25	20 "
2430	1-16	60	2444	1 75	15 "
2431	1-12	60	2445	1 80	15 "
2432	3-32	60	2446	1 80	15 "
2433	1-10	60	2447	1 80	15 "
2434	1-8	60	2448	1 80	15 "
2435	5-32	75	2449	2 25	16 "
2436	3-16	85	2450	2 50	18 "
2437	1-4	1 00	2451	3 50	35 "
2438	5-16	1 25	2452	4 50	35 "
2439	3-8	1 65	2453	5 50	45 "
2440	7-16	2 50	2454	7 50	60 "
2441	1-2	3 50	2455	11 50	75 "

Every set is put up in a neat, compact, dust-proof wooden box, properly labeled—handy alike to the dealer and the person using them.



NO. 2426. LAP HEAD.

This head is built expressly for lapping, though it can be used also for polishing. The prominent features are, that the end of the spindle bears against the screw at the left end, with an intermediate piece between (both being hardened), thus preventing friction when pressure is brought against the lap. The rest can be adjusted to any angle, and the use of it will greatly assist in the lapping of difficult pieces.

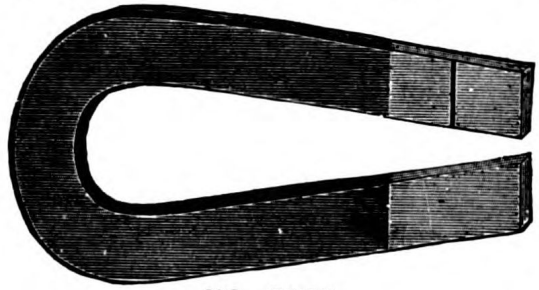
Without Lap..... $8 00

NO. 2433.

IMPROVED MELTING LADLE.

The improvement consists in having the nose, or pouring lip, lengthened out so as to reach the work more readily, and no mechanic who has once used this ladle, will be willing to go back to the old style.

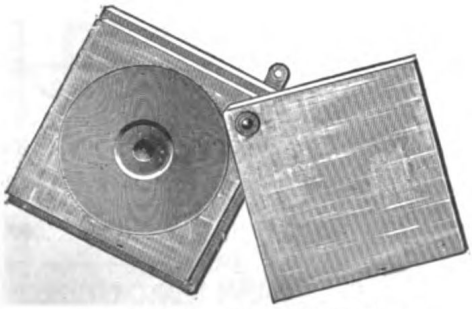
Size	2-in.	2½-in.	3-in.
Price, each	$0 25	$0 30	$0 35



NO. 2478.

HORSESHOE MAGNETS, EXTRA QUALITY.

	2-in.	2¼-in.	3 in.	3½-in.	4-in.	4½-in.	5-in.	6-in.	7-in.	8-in.	9-in.
Each,	$0 10	$0 10	$0 10	$0 15	$0 20	$0 25	$0 30	$0 40	$0 65	$0 75	$1 00



NO. 2427. METAL LAPS.

NO. 2427. METAL LAPS.

We make them from four to fourteen inches in diameter, and charge them with emery or corundum, coarse and fine, on one or both sides, as ordered. In ordering give exact size of spindle they are to fit. The cut to left represents a lap and the box in which we ship them. This box will be found very serviceable for holding the lap when not in use.

Price, per inch, in diameter..... $1 00

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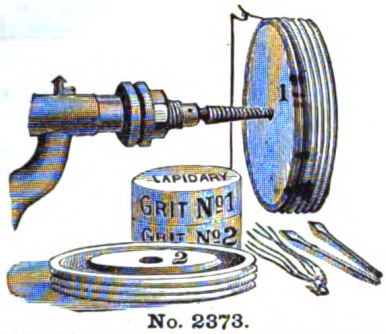
TOOLS L. & M.



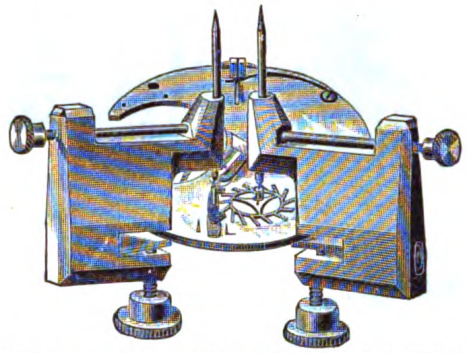
No. 2373.

JEWELERS' LAPIDARY SET.

A complete Lapidary Set for Glass Polishing, including two Lapidaries with Grits, Drills, Polishing materials and chargers, for the rapid polishing of Spectacle Lens, Watch Glasses, etc. They enable any jeweler to do as fine polishing on Glass, Crystal or Pebble Lenses as can be done at the factory. For fitting up skeleton eye-glasses and drilling holes it is just what every jeweler requires.

Directions accompany each box.

Price ..... per set, $1 50

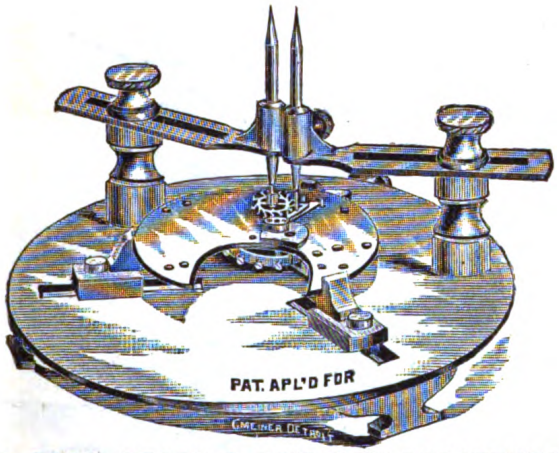


BOYNTON'S ESCAPEMENT MATCHING TOOL.

A new tool of great utility for escapement matching and examining. When this tool is used the adjustment of an escapement is easy.

No. 4454. Price ..... per pair, **$3 00**
No. 4454½. Price ..... set of three, **$4 50**

Set of 3 includes above and one extra arm, which holds balance to place so action of roller jewel in fork can be seen.



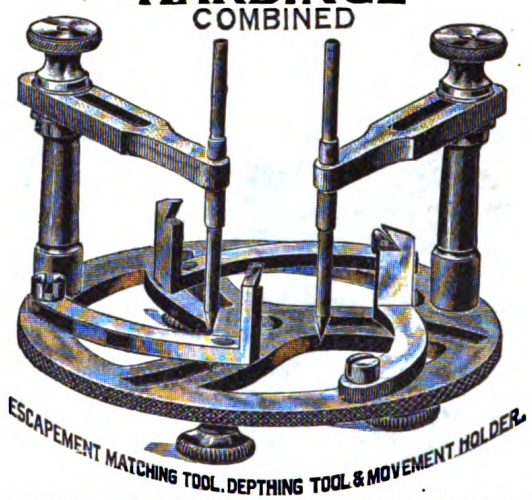
No. 4444. BEACH & CO'S NEW ESCAPEMENT DEPTHENING TOOL.

With this tool you can easily examine and quickly detect the smallest defect in the escapement of any watch, also with the greatest ease remedy any fault. As nine-tenths of all trouble in watch repairing is due to defects in the escapement, this tool, therefore, is the greatest invention that has been given to watchmakers in the past twenty-five years for the saving of **labor** and **reputation.** It demonstrates in a way never before offered you any imperfection in pallet action, banking action, roller action and depthening. It will save its cost in labor to any ordinary watchmaker in from ten to thirty days. Banking and roller actions easily adjusted without the removal of watch-plate. The full directions of how to detect and remedy all defects of the escapement, which accompany each tool, are well worth alone the price of tool. A beautiful tool wholly nickel-plated.

Price, complete $6 00

No. 4447.

HARDINGE COMBINED



The manufacturers have taken the greatest pains to make this tool a thoroughly practical one and know it will be appreciated to the fullest extent. The movement holder will take any size plate, top or bottom, and the upright centers are true and in line. It is no trouble to examine escapement or to set a pallet stone with this tool, as your work is before your eyes, and any depthing in the whole train can be examined equally well. No workman can afford to be without this appliance.

Price, with 2 arms $2 50
" " 3 " 3 25

Cut full size.

NO. 4445. STAKING TOOL MALLET.

Price $0 50

NO. 4446. HORN MALLET.

Price **$0 35**

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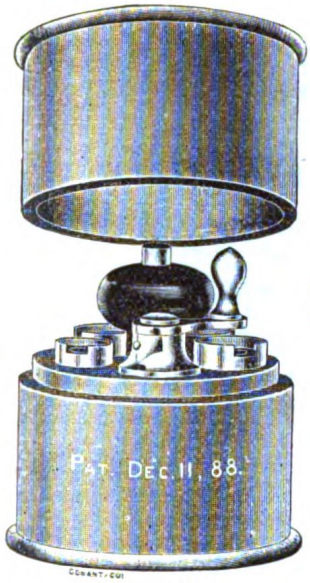
TOOLS M.



No. 4453.

Showing Main Spring Winder in Box.

No. 4453.

Robbin's Improved Main Spring Winder.

This is the Winder for all sizes of watches. Hold in the hand, wind, remove Crank (A), then press on the Plunger (B), and the spring is in the barrel.

Price.....$2.25.

No. 4456.

Reversible Milling Tool.

Milling tool for settings; fits No. 50 wire chuck, large end; No. 20, small end. This mill is reversible both for large and small settings; made of best stubs steel; will last for years.

Price.....$1.00.

No. 4452.

Hand Spectacle Milling Tool.

Price.....$0 25

No. 4450.

New Style Movement Holder.

This Holder can be adjusted to any size movement without changes in the Holder. The Holder is made of rubber and nickel.

Price.....$1.25.

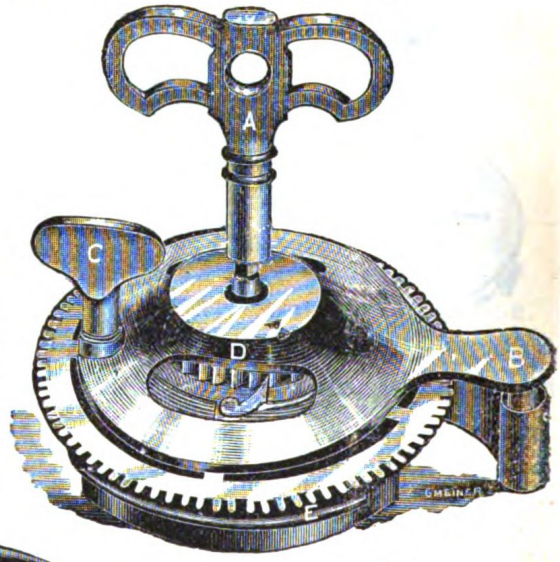
No. 4455.

Spectacle Miller.

Consists of one steel arbor and three sizes of millers, which will fit the arbor, and are numbered Nos. 1, 2 and 3, denoting thickness.

A practical tool for removing hard solder from groove of spectacle after soldering.

Price, Set of 3.....$0 75

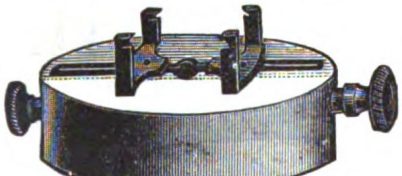


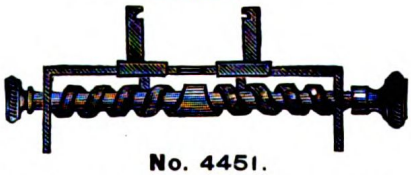
No. 4448.

Clock Main Spring Winder.

Place winding square of wheel through hole (A) in center of tool, adjust eye at outer end of spring at post (B), turn eccentric thumb screw (C) so that end of eccentric will lock over arm of wheel, wind and place clamp in position. Raise click through slot (D) and let down spring.

Price.....$1.00.



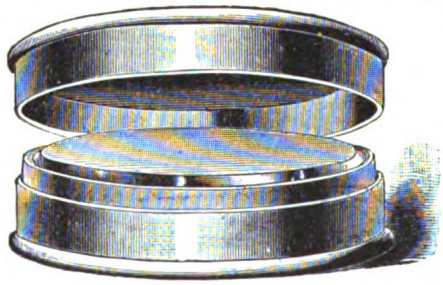


No. 4451.

Rapid Motion Movement Holder.

One of the best and reliable tools for the purpose.

Price, extra finish.....$1.25.

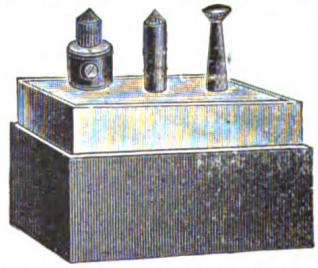


Cut ¾ Size.

No. 4449. Glass Lap.

Ground Glass Lap, 2 inches in diameter, in polished wood; is used to grind all sorts of steel work requiring a flat surface and neat finish; or keeping oil-stone powder ready mixed with oil, for use when you peg out a rusty pinion; it gives a clear gray finish like American watches, and for all polishing material.

Price.....$0 20.



No. 2480. Milling Tool.

Set of 3, all fit No. 40 wire chuck; made for milling all kinds of settings for Rings, flat or beveled stones.

Price.....$1.00

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TOOLS M.

HICKORY MALLETS.

No. 2470. Price.....$0 15
" 2471. " Large.....$0 25 and 35

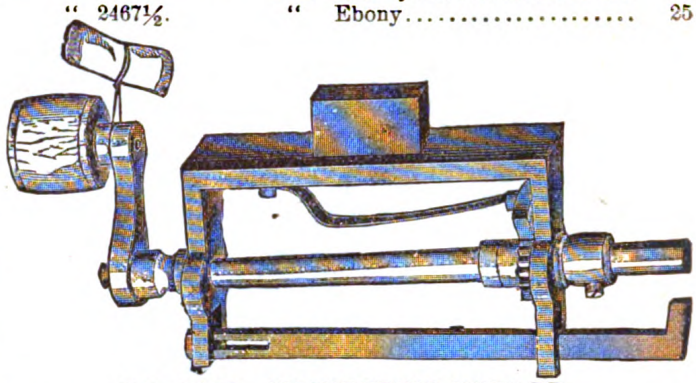
MALLET.

No. 2466. Boxwood.....$0 15
" 2467. " Fine Quality..... 25
" 2467½. " Ebony..... 25

PATENT RAWHIDE MALLETS.

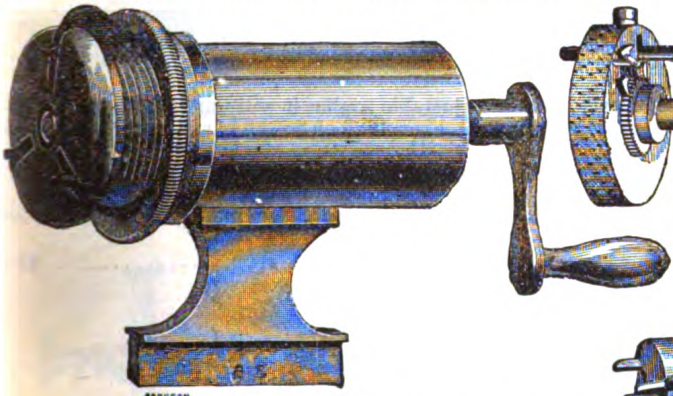
These are light Mallets, made entirely of Hide (except the handle), and suited to a variety of uses.

No.	Diam.	Length	Weight	Each
2458	1 in	1¾ in	1½ oz	$0 25
2459	1¼ in	2½ in	3 oz	30
2460	1½ in	2¾ in	5 oz	35
2461	1¾ in	3 in	7 oz	45
2462	2 in	3¼ in	10 oz	55
2463	2½ in	4 inll	20 oz	1 25



NO. 2468. MAINSPRING WINDER.

Mainspring Winders, with extra Collets.....each, $0 35
Nickel-plated..... " 65



NO. 2464. STARK MAINSPRING WINDER

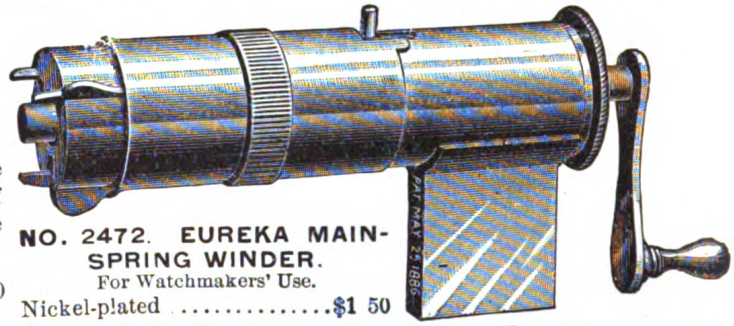
Is the only Mainspring Winder that will wind any size American or foreign mainspring. Will not get out of order. It can be adjusted instantly without any trouble or expense. Full directions with each box.

Price.....each, $2 00

NO. 2469. IDE'S UNIVERSAL MAINSPRING WINDER.

We are now prepared to furnish all of Ide's Tools.

Price of Mainspring Winder. $1 75



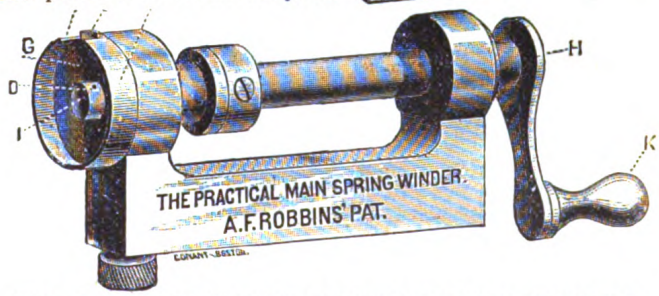
NO. 2472. EUREKA MAINSPRING WINDER.

For Watchmakers' Use.

Nickel-plated $1 50

NO. 2465. CLOCK MAINSPRING UNWINDER.

Nickel-plated $0 50



NO. 2473. NEW STYLE MAINSPRING WINDER.

Three different size barrels go with this Winder; for 6, 8, 16 and 18 size.....$1 25

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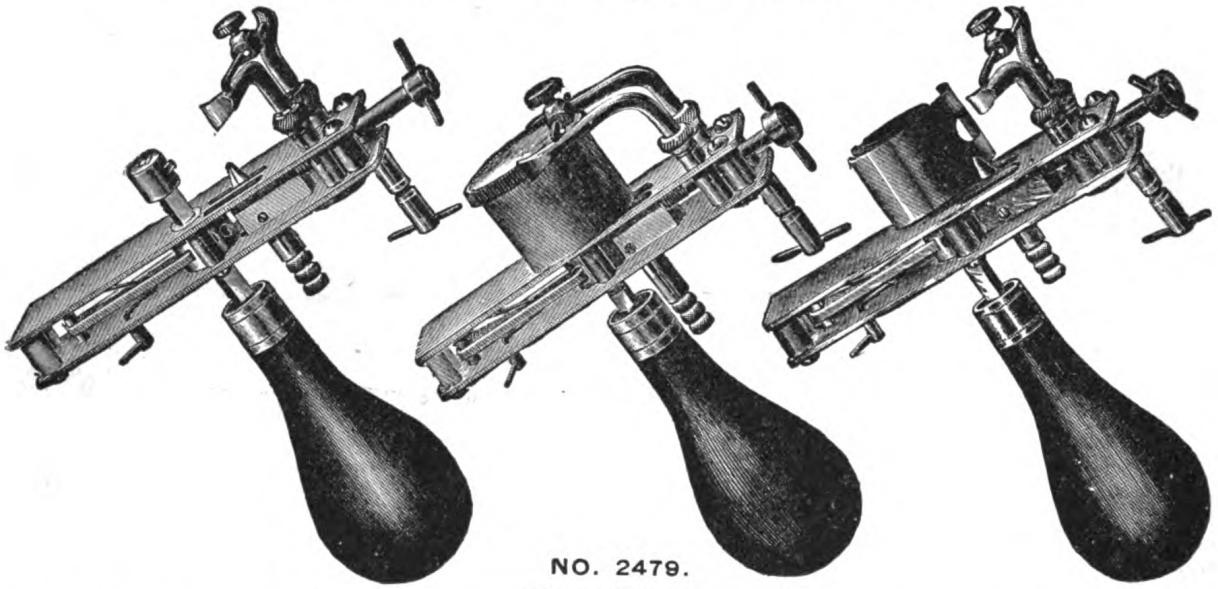
TOOLS M.

VAUGHAN'S PATENT MAIN SPRING WINDER

FOR REMOVING & REPLACING SPRINGS IN CLOCK BARRELS.



NO. 2479.

1 Cuts one-half size. 2 3

Figure 1 shows the machine ready for use.

Figure 2 shows the arms adjusted to teeth of barrel, for holding barrel while spring is being wound.

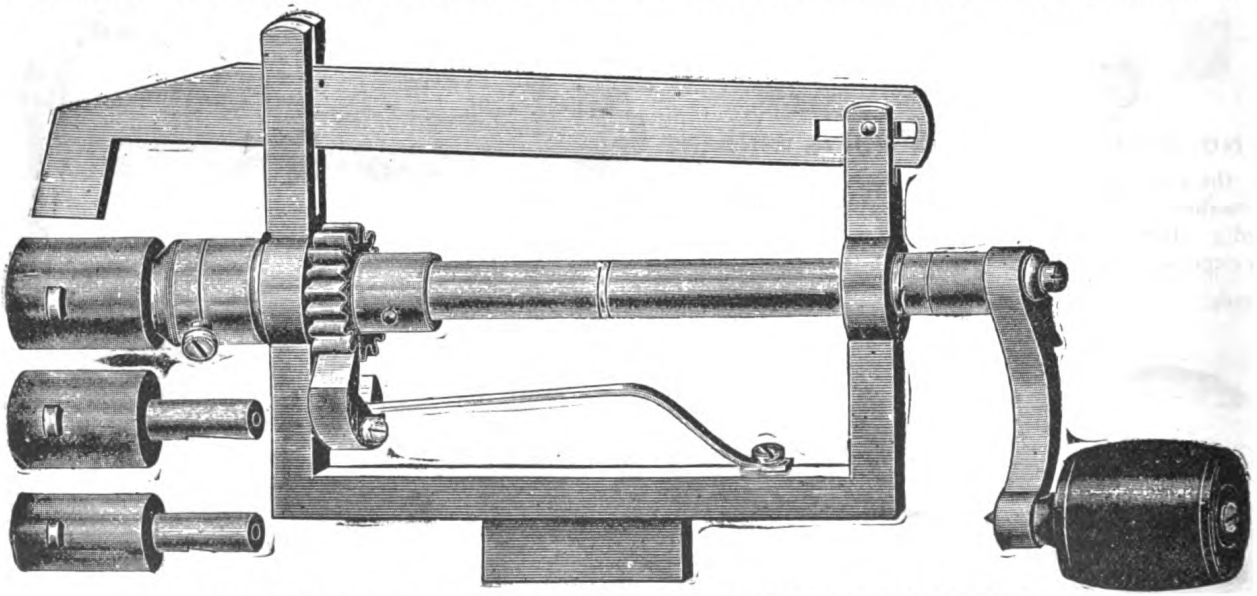
Figure 3 shows the winder holding the spring after barrel has been removed, and also as wound ready to place in the barrel.

The machine winds either way, as the case may require, and every part is adjustable so that it will handle any spring from the smallest alarm to the heavy eight-day, and holds any barrel from the smallest French clock to the barrel used in the eight-day Seth Thomas time-piece, 2¾ inches in diameter.

The plates and all the working parts are made of steel and, though having a light and neat appearance, the machine is strong and durable.

Does not require a vise, but can be used anywhere and with no strain on the hands more than winding the spring after it is in the clock.

Price of machine, new and improved..... $3 50



MAINSPRING WINDER FOR CLOCK AND MUSIC BOX SPRINGS.

No. 2475. With extra collets, 8½ inches long, large size..... $3 50
" 2476. " 9½ " " 5 50

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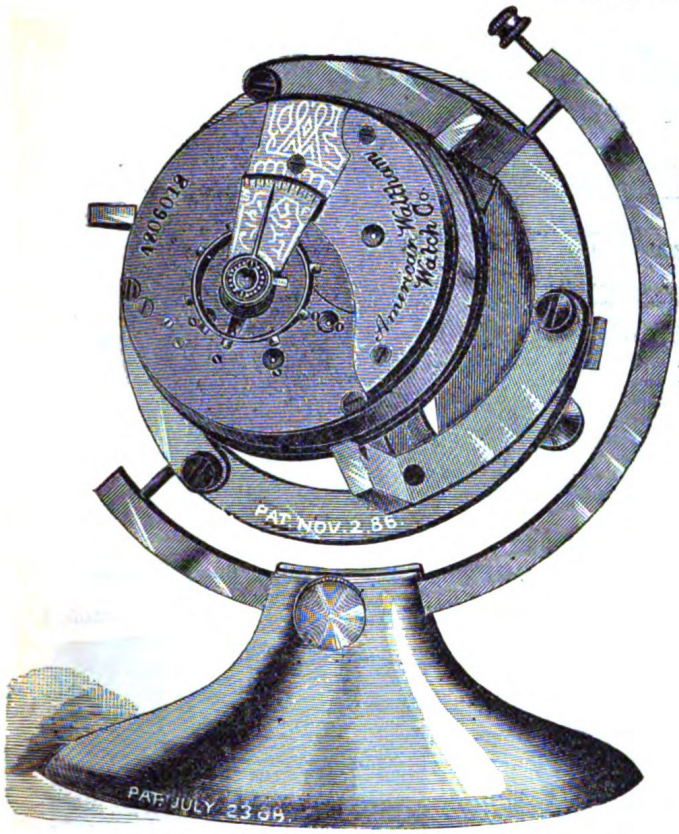
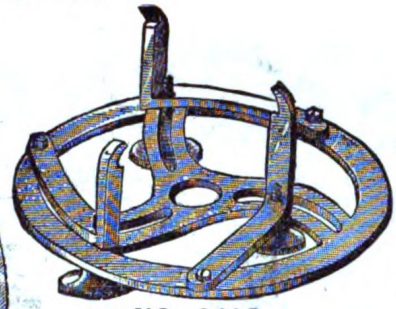
TOOLS M.



NO. 2481. NEW MOVEMENT HOLDER AND NICKEL PLATED ADJUSTER.

Cut showing position of movement.

Price.....each, $1 75

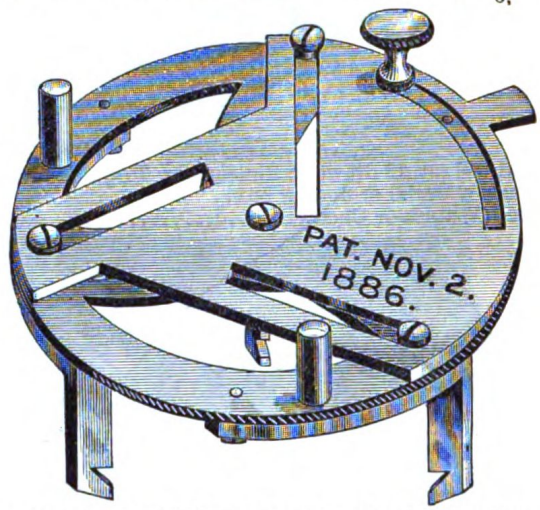


NO. 2482. MOVEMENT HOLDER.

Brass, $0 35 Nickel plated, $0 60

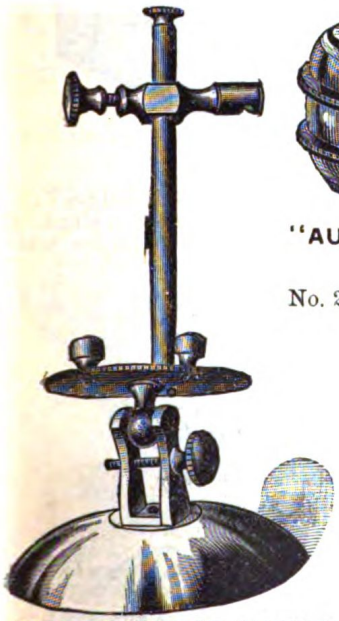
NO. 2483. MOVEMENT RESTS.

Boxwood, sets of 4, $0 15
" " 6, 25



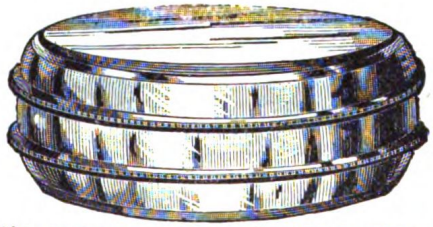
NO. 2484. NEW STYLE MOVEMENT HOLDER.

Nickel plated.....$0 35



MOVEMENT ADJUSTER.

No. 2487. Price.....$0 75
" 2488. Nickel Plated.. 1 00



"AURORA" MOVEMENT BOXES.

For 6, 8, 16 and 18 size.

No. 2485. Silver plated.....$2 25

NO. 2491. AGATE MORTARS.

Size,	1⅜ in.	1½	1⅞	2	2⅝	3
Each,	$1 00	$1 25	$1 50	$1 75	$2 50	$4 00

ROCKFORD MOVEMENT BOXES.

PENDANT SET.

No. 2489. Glass back and front..doz. $12 00
Without Pendant Bow, Screw Bezel and Back.
No. 2490. 18 size.....per doz. $12 00
In these boxes stem-winding movements rewound without fingering or exposure to dust.

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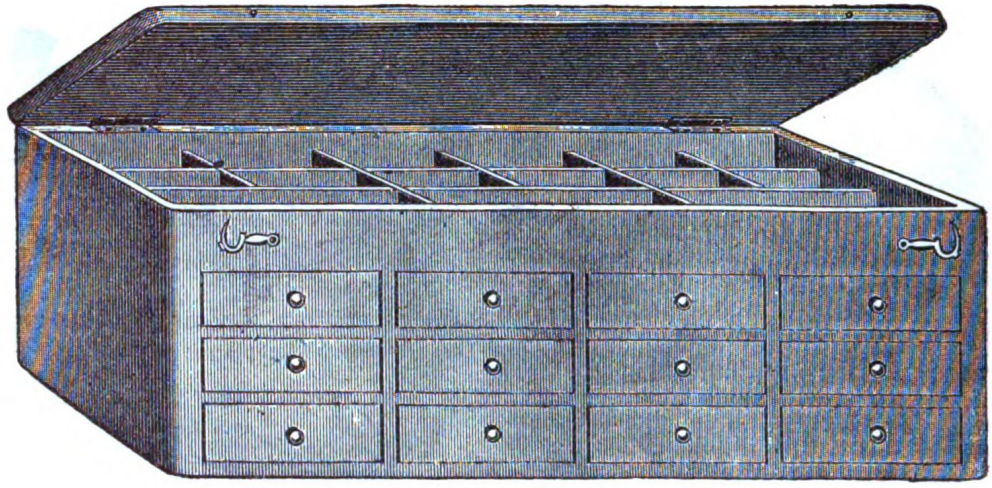
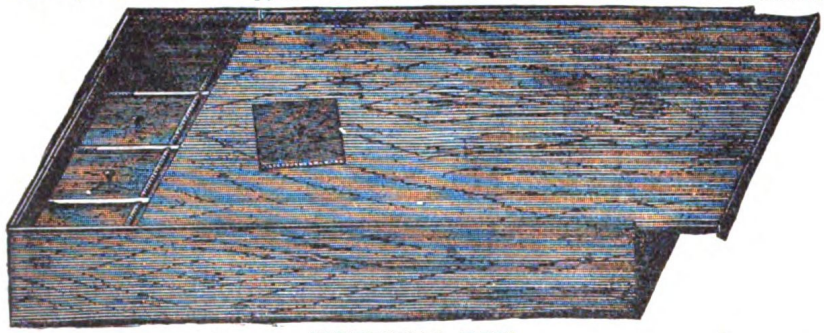
TOOLS M.



NO. 2492. MATERIAL BOX.

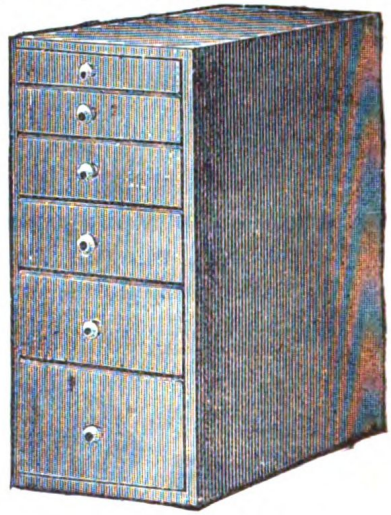
Solid walnut, 12 drawers; dimensions, 10⅞ inches long, 3⅞ inches wide, drawers graduated depths; finely finished, can be used as a material or finding box.

Price (Walnut or Cherry).....each, $1 25



MATERIAL BOX.

No. 2493.	Small,	24 compartments,	Price	each,	$0 50
" 2494.	Medium,	35 "	"	"	75
" 2495.	Large,	50 "	"	"	1 00



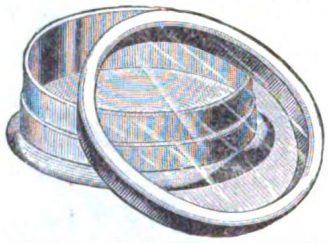
No. 2496.

MATERIAL AND TOOL CHEST.

This Cabinet is made of Black Walnut, 17 inches high, 14 inches deep, 9 inches wide, nicely finished, with door, lock and key.

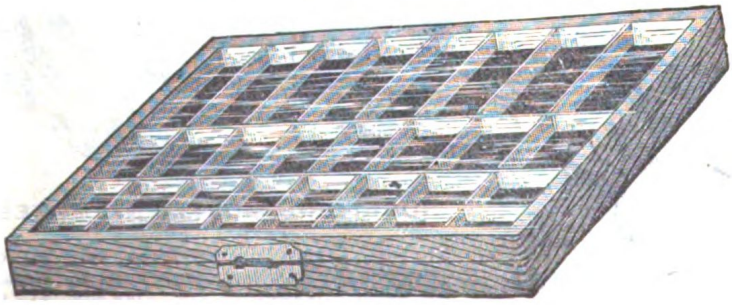
Price.....$2 50

" with Door, Lock and Key..... 3 00



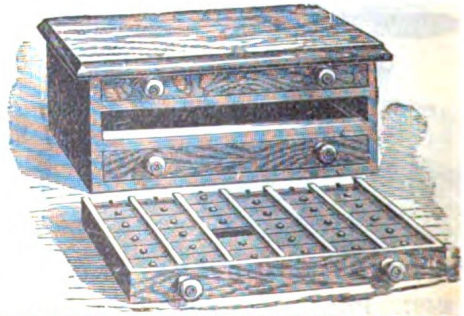
NO. 2500. MATERIAL BOXES.

Metal, Glass Top, per doz.....$1 00



MATERIAL BOX.

No. 2498.	Glass Top,	35 divisions		each,	$0 75
" 2499.	" "	50 "		"	1 00



FOWLER'S PATENT MATERIAL CHEST.

No. 2497. Price.....each, $3 50

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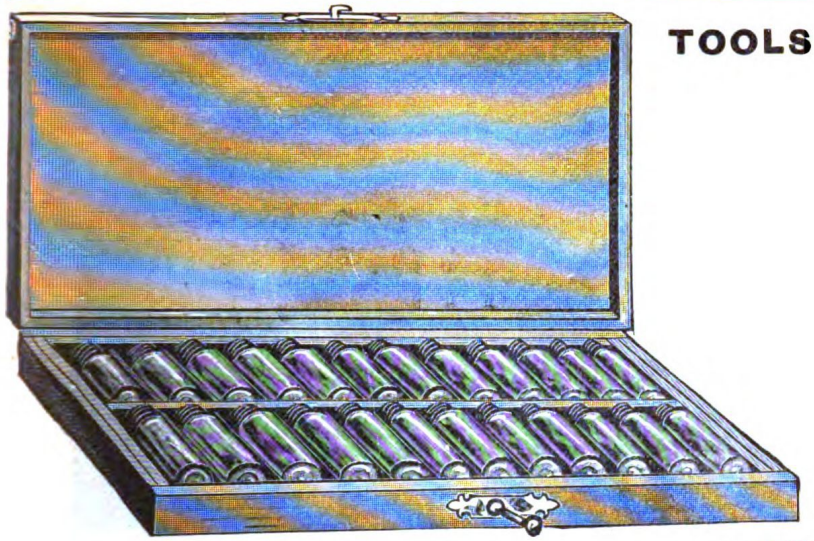
TOOLS M.



CUTS OF BOTTLES FULL SIZE.
No. 313. No. 314 B.

MATERIAL CABINET.

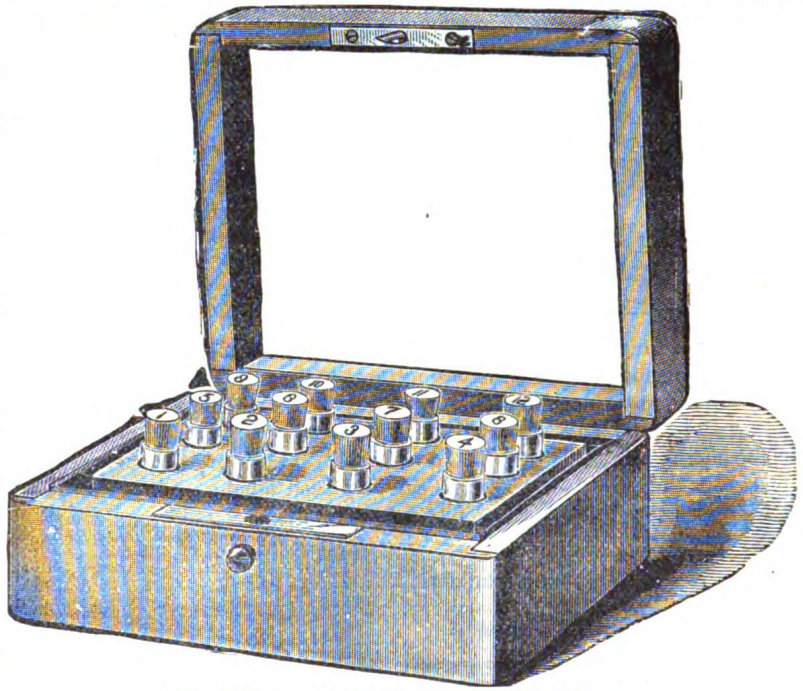
This case is made of Rosewood, finely finished, nickel hinges and patent clasp; bottom of Box is grooved to an exact fit of bottles, preventing them from jarring and breaking. Made in two sizes.

No. 2501 is 10x4¾ inches, and contains 24 bottles, as No. 314, 2 inches long.

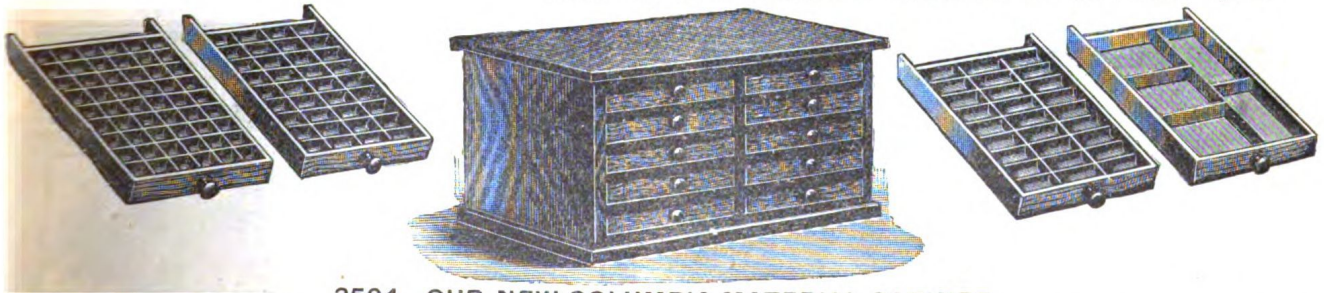
Price of Case and 24 bottles.....$1 25

No. 2502 is 9x5 inches, and contains 24 Bottles, as No. 313, 1¼ inches long, as our No. 2 Bottle, page 27.

Price, for Case and Bottles.....each, $1 25



NO. 2503. MATERIAL CABINET.
Walnut, contains 12 bottles.
Price.....$0 50



2504. OUR NEW COLUMBIA MATERIAL CABINET.

Above illustration represents our New Material Cabinet, made of either walnut or oak, being well made and handsomely finished and an ornament to any Jewelry store, contains 10 drawers, partitioned off as shown in cuts both sides of case. The 6 top drawers contain 54 compartments, each ⅞ x 1¼ in.; 1 drawer, 36 compartments, ¾ x 2¼; 1 drawer, ⅞ x 2¼, 27 compartments; 1 drawer, ⅞ x 1¾, 36 compartments, and 1 drawer divided into 5 spaces; total, 428 compartments. Bottom of each drawer is rounded out of a solid piece of wood, so that material may be kept either loose or in screw cap vials. Size of Cabinet 9¼ inches high, 12 inches wide and 18 inches long. Price.....$5 50

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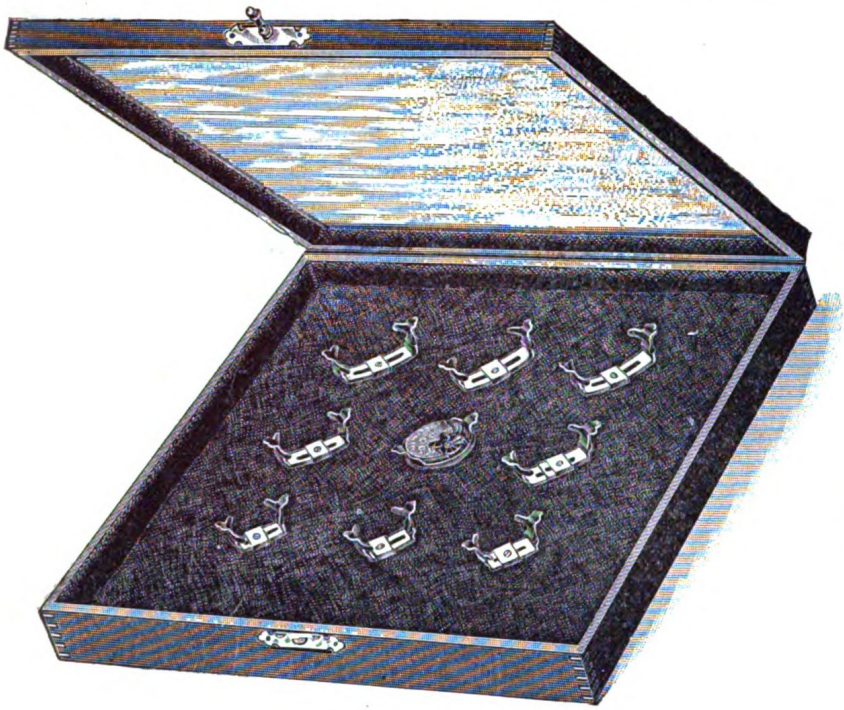
TOOLS M.

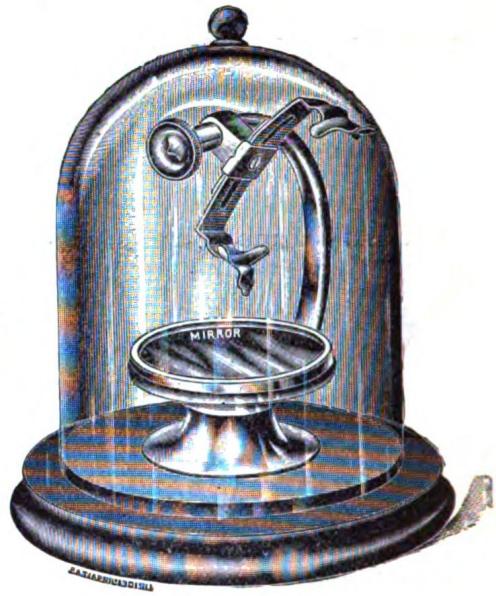


DISPLAY TRAY.

ALLEN & PENNEY'S RUNNING MOVEMENTS.

Watch Tray affords retail dealers the very best method of showing all sizes of movements without exposing them to dust and careless handling, as they always are when shown in open trays. The holders can be instantly adjusted to take any size movement, 0 size to 18 size. These trays are made and kept in stock in standard sizes, 11¾x11¾, and although they have glass tops they are stack trays and can be placed among ordinary trays when the dealer is packing his goods into safe or vaults.

No.		
4457	Price of Tray, with 9 holders	$3 00
4458	" " " 12 "	3 50
4459	" " " 16 "	4 00

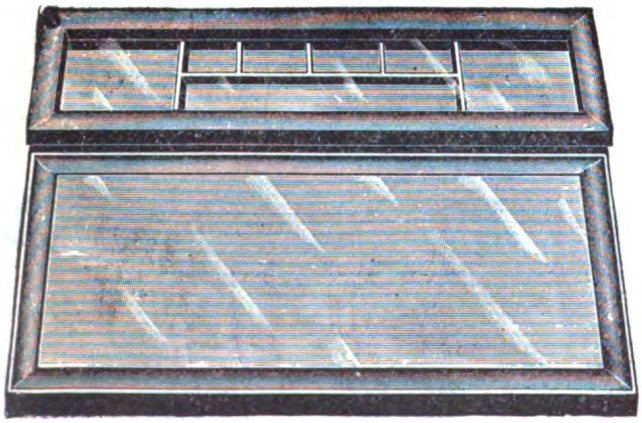


NO. 4460.

ALLEN & PENNEY'S MOVEMENT HOLDER.

The other device shown here is a new invention, in which the same adjustable holder is utilized to give the watchmaker the most perfect movement holder now on the market. The arm to which the holder is attached enables the watch repairer to set the movement in any position for adjustment or examination. The mirror which is set in the beautifully finished base enables the repairer to see the movement by perfect reflection, thus avoiding the awkward old-style method of holding the time-piece above the workman's head. A substantial and beautifully finished base over which a glass cover is fitted.

No. 2516. Price, nickel-plated.....$2 50

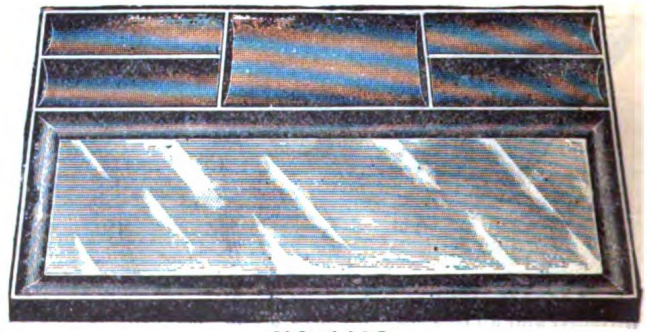


NO. 4461.

MAHOGANY AND GLASS BENCH MATERIAL PLATE.

9¾ x 6⅞ inches.

Price.....$0 85



NO 4462.

MAHOGANY AND GLASS BENCH MATERIAL PLATE.

9 x 6 inches.

Price.....$0 75

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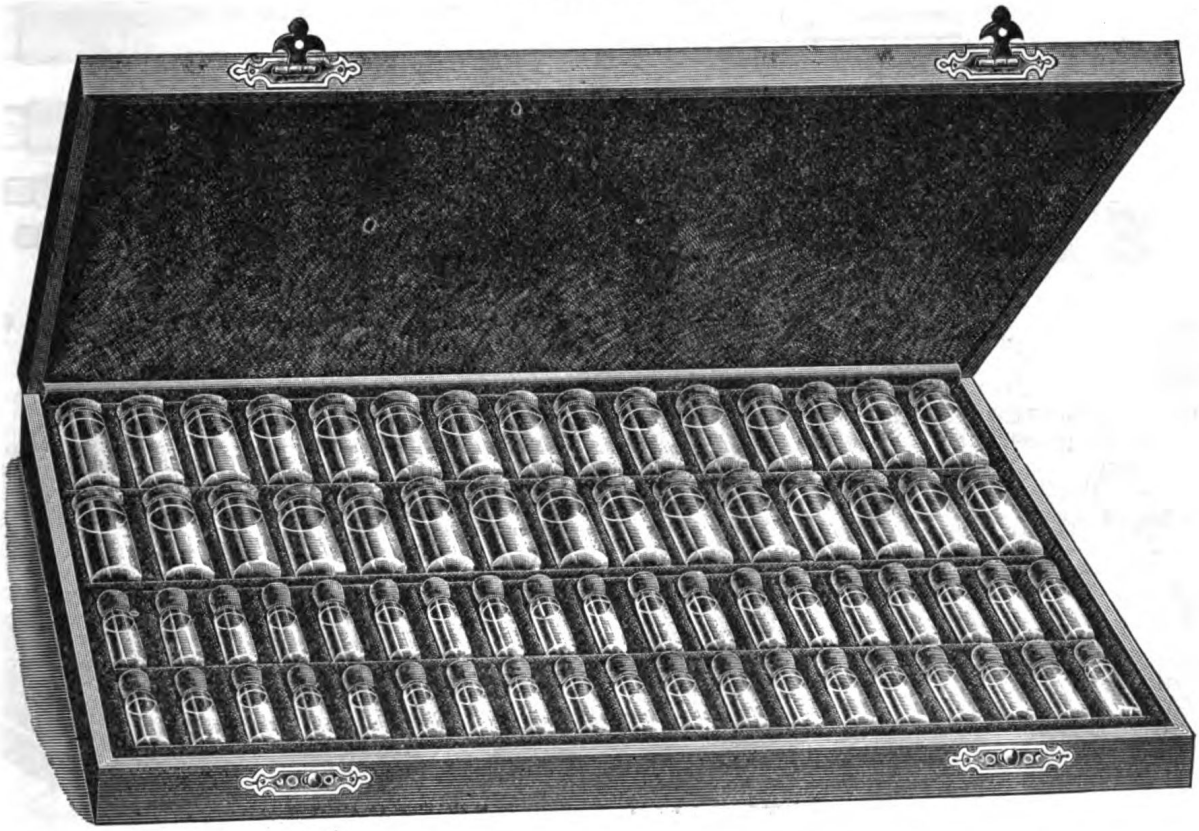
TOOLS M.



NO. 4463. SWARTCHILD & CO.'S INDISPENSABLE MATERIAL CABINET.

Solid Oak, highly polished, 12x8½, contains 30 large and 36 small bottles.

Price..... .....each, $2 50

For Swartchild & Co.'s complete material outfit in case, as shown above, see page 370.

NO. 4464. MATERIAL BOX.

With 24 screw-top bottles.

Price.....$1 25

NO. 4465. MATERIAL BOX.

With glass bottles.

Price.....$0 75

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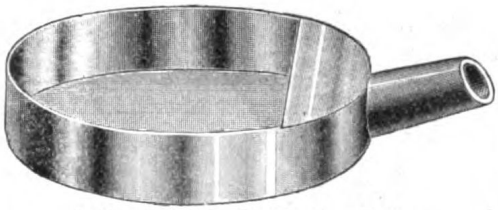
TOOLS M.



BUSH'S MATERIAL CUP.

No. 2507. Nickel-plated.....each, $0 25

TAPER RING-MANDRELS.

Steel, Not Hardened.

No. 4467.	14 in. long,	from	$\frac{1}{2}$	inch to	1 in.	taper	.....	$1 00
" 4468.	12	"	"	$\frac{3}{8}$ "	$\frac{3}{4}$	"	.....	85
" 4469.	10	"	"	$\frac{1}{4}$ "	$\frac{1}{2}$	"	.....	65
" 4470.	8	"	"	$\frac{3}{16}$ "	$\frac{3}{8}$	"	.....	50
" 3471.	Full set of 4						.....	3 00

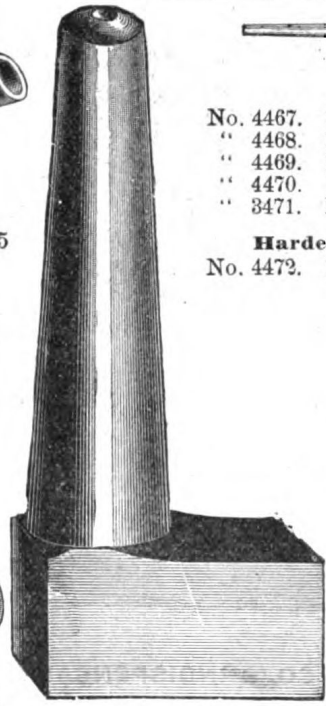
Hardened Steel, and Ground after Hardening.

No. 4472. 14 in. long, from ½ in. to 1 in. taper.. .. ..$2 50

MOVEMENT COVER WITH GLASS TRAY.

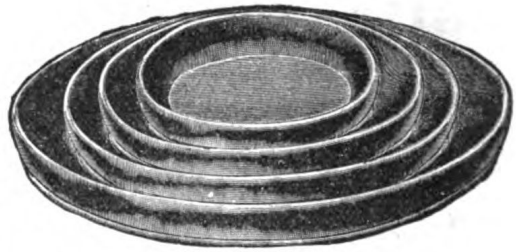
Ground and fitted, 5-inch base.

No. 2518. Small size.....$0 50
Large size..... 75



THIMBLE MANDREL.

No. 2521. To be held in vise.....$0 50
Nickel-plated, extra 25

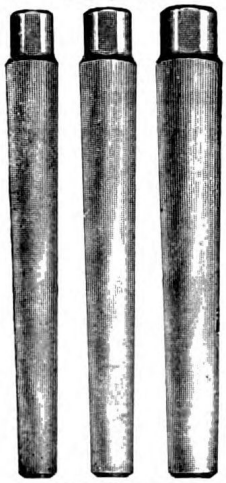


Cut one-half size.

MAHOGANY MATERIAL CUPS.

Very handy and neat to put under your glass cover.

No. 2519. Mahogany Material Cups, in sets of 4 .. ..per set, $0 60
" 2520. Horn Material Cups, in sets of 4, per set..... ..... 1 00



No. 4466.

LATHE RING-MANDRELS.

Full set of three.....$5 00
Lathe Dog, to carry Mandrels..... 50

These mandrels are of hardened steel, ground after hardening, and will run perfectly true, taking any size rings, from No. 1 to No. 13. Being of slight taper, the ring will hold securely.

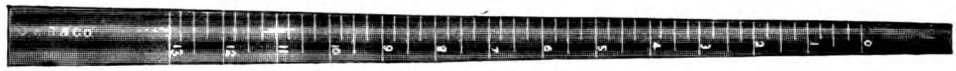
PLAIN TAPER STEEL RING-MANDRELS.

No. 2508.	9 inch,	$\frac{3}{8}$x$\frac{3}{16}$	.....each,	$0 40	No. 2512.	13 inch, $\frac{7}{8}$x$\frac{3}{8}$.....	each, $0 90
" 2509.	10 "	$\frac{1}{2}$x$\frac{1}{4}$	..... "	60	" 2513.	14 " $\frac{15}{16}$x$\frac{3}{8}$ plain,	" 1 00
" 2510.	11 "	$\frac{3}{4}$x$\frac{3}{8}$	..... "	75	" 2514.	14 " $\frac{15}{16}$x$\frac{3}{8}$ nickel,	" 1 25
" 2511.	12 "	$\frac{7}{8}$x$\frac{3}{8}$	..... "	80			

NO. 2515. HARDENED GRADUATED MANDRELS.

These Mandrels are made of fine crucib'e steel, graduated to the "Allen Standard," hardened and finely polished. In using these Mandrels a ring can be hammered to size without repeated sizing on the ordinary ring stick.

No. 2515. Price.... .....each, $3 00



GRADUATED STEEL RING-MANDRELS.

No. 2516. 14 inch, plain....each, $1 00 No. 2517. 14 inch, nickel plated, each, $1 25
" 2517½ Hardened, imported, style 2517..... .... " 2 25

NO. 2522. RING-MANDREL.

12½ inch.....each, $0 65 14 inch.....each, $0 80 Nickel-plating, extra, $0 25

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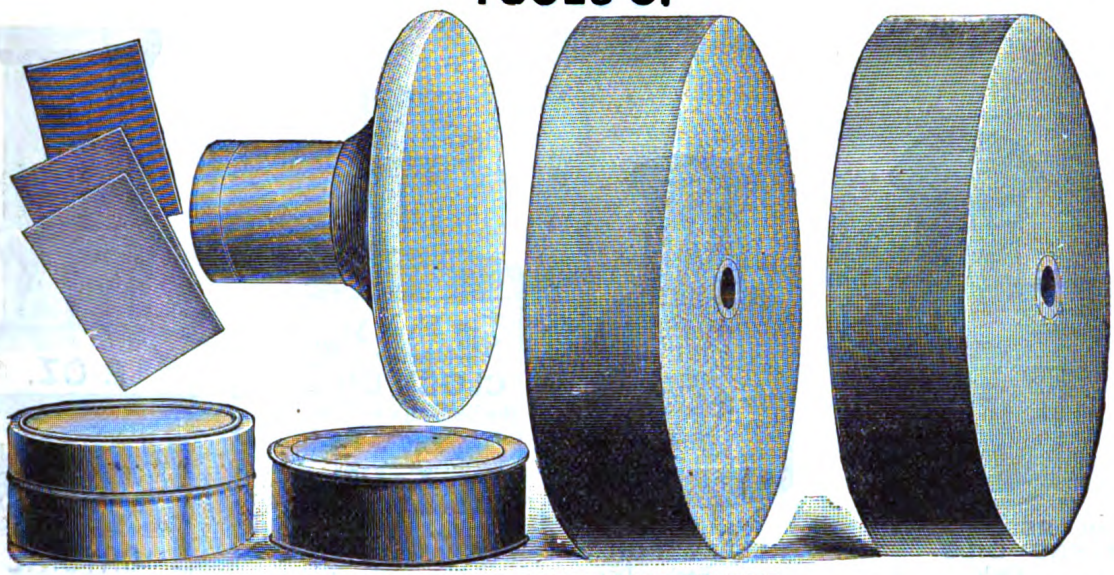
TOOLS O.



NO. 2523. THE OPTICIAN'S FRIEND.

This combination comprises a complete outfit for the use of the general optician and jeweler, for grinding and fitting lenses or trimming watch crystals, as well as setting stones. The entire outfit is packed in a well-made mahogany box, with hinge, cover, and partitioned off to hold the various parts. Always ready for use.

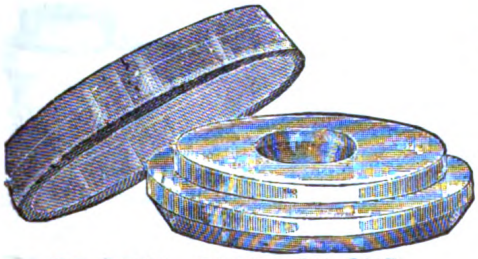
NOTE.—Full directions accompany each box.

Price, as shown above.....$5 00

NO. 2524. GLASS OIL CUP.
Price.....each, $0 15

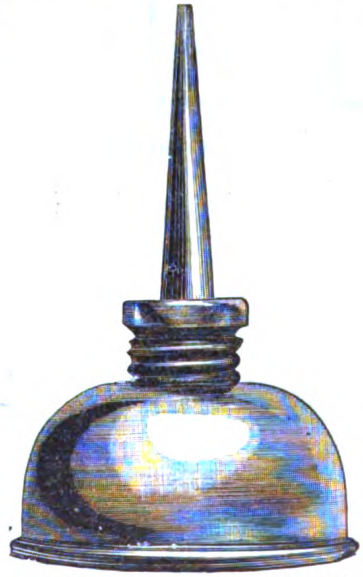
NO. 2525. GLASS OIL CUP.
Price.....each, $0 15

NO. 2528. BOXWOOD OIL CUP.
Price.....each, $0 15



NO. 2526. GLASS OIL CUP.
Price.....each, $0 15

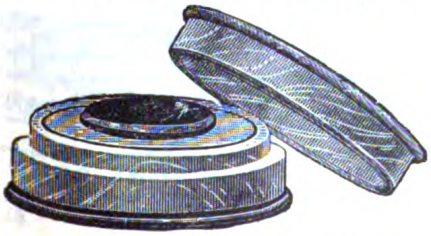
NO. 2530. NEW STYLE BOXWOOD OIL CUP AND OILER COMBINED.
Price.....each, $0 30



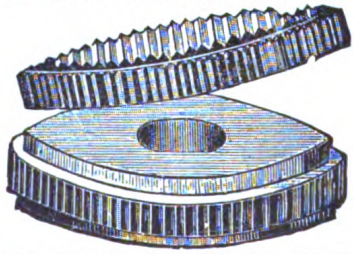
PERFECTION MACHINE OILER.

The body is stamped of heavy tin, the spout lapped and has a drip cup at its base with which all the spout drippings are caught. The bottoms are of *brass*.

No. 2544. Tin, each, $0 10; Brass, $0 15
" 2545. Tin, per doz..... 75
Brass, " 1 25



NO. 2527. BOXWOOD OIL CUP.
No. 2527. Price.....each, $0 15
" 2531½. Celluloid.... " 20



NO. 2529. GLASS OIL CUP.
Price.....each, $0 15

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TOOLS O.

No. 2533.
CUYPERS' OILS.

	Each.	Doz.
Clock Oil	$0 15	$1 50
Watch Oil	15	1 50
Chronometer Oil	25	2 75

No. 2534.
KELLEY'S OIL.

	Each.	Doz.
Watch	$0 25	$2 75
Clock	25	2 75
Chr'm'r,	35	3 50

No. 2535.
NYE'S OIL.

	Each.	Doz.
Watch	$0 25	$2 75
Clock	25	2 75
Chr'm'r	35	3 50

No. 2538.
MACHINE OIL.
Price, each, $0 15; doz., $1 75

NOTICE.
Kelley's and Nye's Oils advanced January 1st., 1896, to prices as quoted above.

No. 2536.
WHEELER'S OIL.

	Each.	Doz.
Watch	$0 15	$1 75
Clock	15	1 75
Chr'm'r	30	3 00

No. 4476.
NYE'S TOWER CLOCK OIL.
Price, per bottle..... $0 50

No. 3. **No. 10.**
DR. PEABODY'S OILS.

	Each.	Doz.
Clock Oil	$0 15	$1 50
Watch Oil	15	1 50
Chronometer Oil	25	2 50

No. 15.
GUN LOCK OIL.
Ea., $0 15; doz., $1 75

No. 20.
TYPE WRITER OIL.
Each, $0 15; doz., $1 75

No. 2537.
DIAMOND OIL.
Each..... $0 25

STULL'S SUPERFINE OILS.

		Each.	Doz.
No. 25.	Watch	$0 15	$1 75
No. 30.	Clock	15	1 75
No. 35.	French Clock	15	1 75
No. 40.	Chronometer	25	3 00

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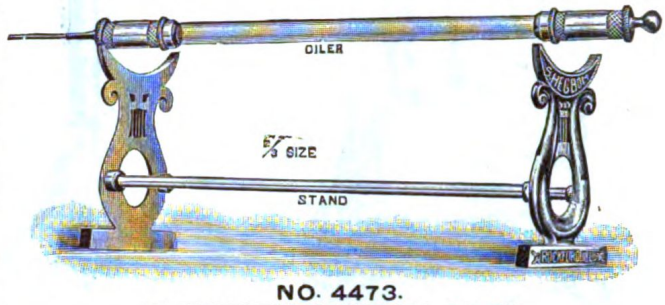
TOOLS O.

NO. 50.
Like above in half pint cans, per doz., $3 00

NO. 55.
Like above in half pint cans, per doz., $3 00



NO. 4473.
PERFECTION WATCH OILER.
This oiler is made with a colored glass tube to protect the oil from light. The point is made of finely tempered steel which will not corrode and is almost impossible to get out of repair. It has a neat stand and is an ornament to any watchmaker's bench. Price, complete.....$1 25

NO. 4475. PERFECTION FOUNTAIN OILER.
Is made of hard Rubber with Hollow Steel Point, the oil receptacle is made of glass, with German silver cap, keeping the oil clean and always ready for use and can be closed the same as a fountain pen and carried in the pocket.
Price.....each, $1 00

NO. 2543. THE D'JEBER GRADUATING GOLD TIP WATCH OILER.
Price.....$0 25

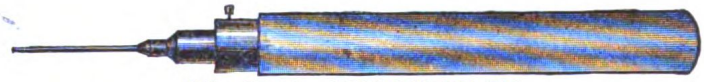
NO. 45.
SAFETY BICYCLE OILER.
The spout can be drawn out 2 inches. This renders it possible to reach any part of the bicycle without difficulty. When the spout is pushed back the oiler is automatically closed so that it cannot leak. Made of brass, heavy nickel-plated.
Price, each $0 25
" per doz., 2 50

NO. 4474. COLUMBIAN FOUNTAIN WATCH OILER.
Price.....$1 00

WATCH OILER.

No. 2539	Nickel-plated.....	each, $0 10
" 2540	" " best quality.....	" 15

Like above in 8 oz. bottles, per doz., $1 00



NO. 2541. WATCH OILER.
The handle is made of boxwood, being hollow inside, in which is a glass tube, which is screwed tight, as shown above. When required take out the tube, put finger over end of glass tube, which forces out the oil; no waste.
Price.....each, $0 25

NO. 2542. OILER WITH 14K. GOLD TIP.
Very neatly made. The collet does not allow it to roll, and also keeps the point up from the bench, so that it is always clean.
Price.....each, $0 25

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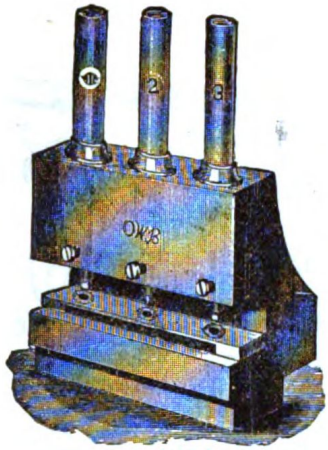
TOOLS P.



Cut is full size.

MAINSPRING PUNCH VISE.

No. 2546. Price.....$1 50
Nickel plated, extra.. 30

NO. 2547.

ENGLISH MAINSPRING PUNCH.

Price.....$0 45
Nickel plated 60

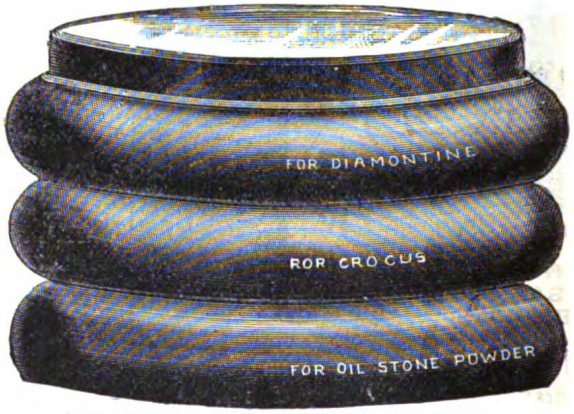
ROUGE BOXES OR POLISHING BLOCKS.

No. 2548. Single.....each, $0 35
" 2549. Double .... " 50
" 2550. Triple ..... " 75

NO. 2553. PICKLE PANS.

Made of good heavy copper No. 9 Brown & Sharp's Gauge, and used by repairers of jewelry for "boiling out" purposes.

3-in. $0 50 3½-in. $0 70 4-in. $0 90 4½-in. $1 10 5-in. $1 35
5½-in. $1 50 6-in. $1 75 6½-in. $2 20 7-in. $2 50



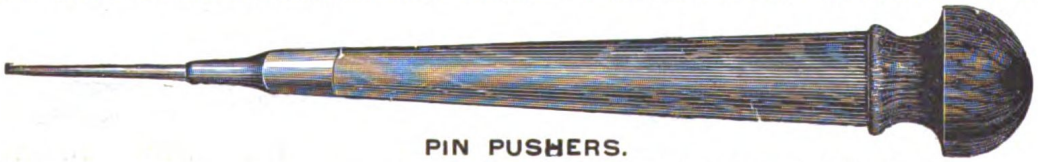
IMPERIAL POLISHING BLOCK.

No. 2551. Price.....each, $0 65
" 2552. Best American make and finish..... 95

NO. 2554. NEW COPPER PICKLE PAN.

Most practical thing out for boiling out jewelry after soldering. To be used over gas or alcohol lamp. Bowl 3 inches.
(Use sulphuric acid 1 part, water 15 to 20 parts.)

Price.....each, $0 25



PIN PUSHERS.

No. 2555. Large.....each, $0 15 Best quality, nickel plated.....each, $0 25

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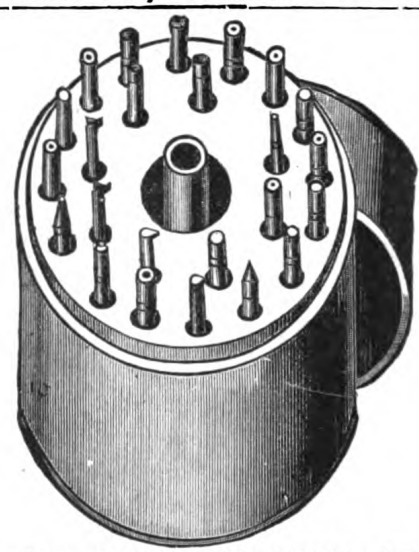
TOOLS P.

2556 2557 2558 2559 2560 2561 2562 2563 2564

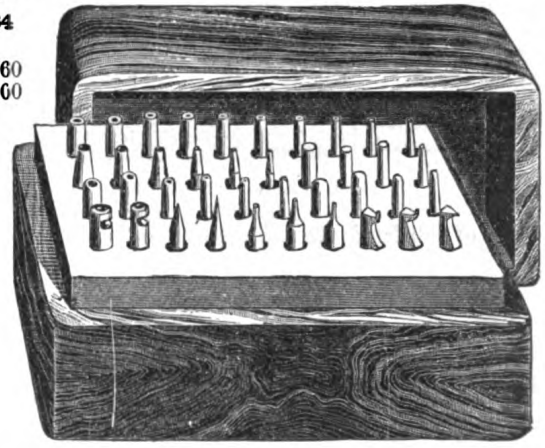
OPEN CLOCK CLOSING HOLE PUNCHES.

Best quality ..... each, $ 30 Set of 9.....$2 60
Nickel-plated, best quality.... " 40 " Nickel-plated.. 3 60



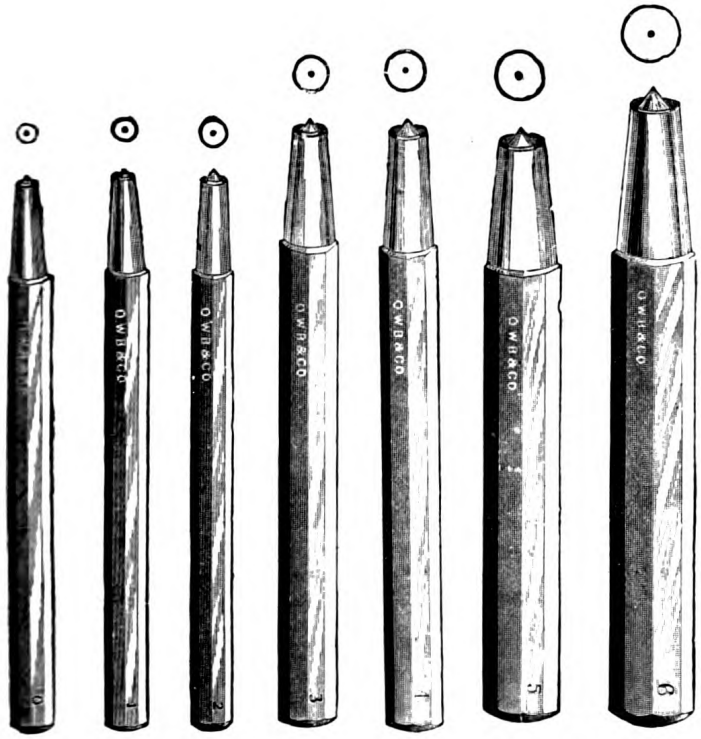
SET PUNCHES WITH HOLLOW STAKE.

No. 2572. Set of 18.....$0 80
" 2573. " 24..... 1 00
" 2574. " 36..... 2 25



SETS OF PUNCHES IN BOX.

No. 2575. Sets of 21, $1 20 No. 2576. Sets of 24, $1 25
" 2577. " 32, 1 50 " 2578. " 40, 1 75
" 2579. " 50, 2 50 " 2580 " 56, 2 90
" 2581. " 60, 3 50



2565 2566 2567 2568 2569 2570 2571

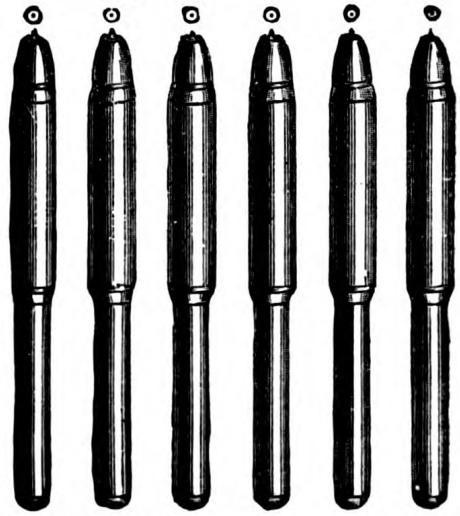
Seven sizes — smaller, round; larger, octagon.

CLOCK CLOSING HOLE PUNCHES, SPRING CENTER.

Best quality..... each, $0 35 Per set of 7.....$2 65
Nickel-plated, best quality " 45 " " 7, Nickel-pl., 3 25

WATCH CLOSING HOLE PUNCHES.

Each.....$0 15 In sets of 6....$0 75
Best quality, each, 20 " 6.... 1 00



2582 2583 2584 2585 2586 2587

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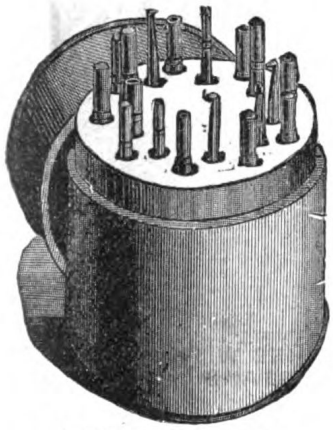
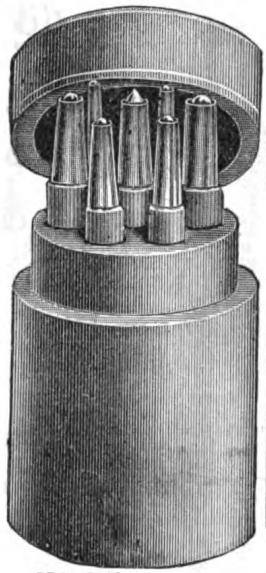
TOOLS P.

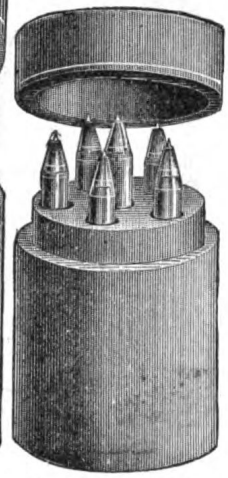


SET PUNCHES.

No. 2588.	Sets of 12.	..	$0 35
" 2589.	" 18.	..	55
" 2590.	" 24.	..	75



NO. 2591. Clock.

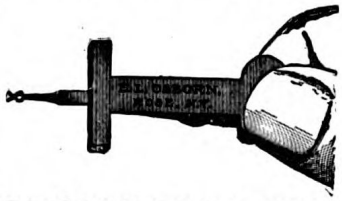


NO. 2592. Watch.

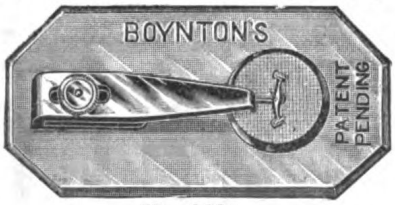
PUNCHES IN WOODEN BOXES.

No. 2591.	Clock, Price per box	$2 25
" 2592.	Watch, " "	1 00

NO. 4480. CLOSING HOLE PUNCH.
Finely Tempered Steel Points.
Price of 3 different sizes, nickel-plated..... $0 75

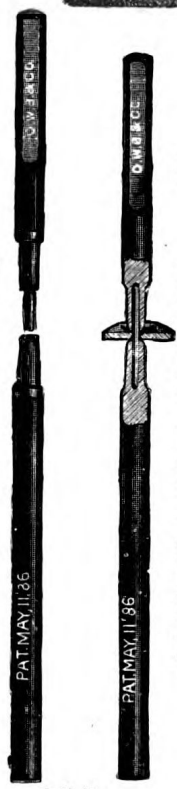


NO. 4480½. OSBORN'S PALLET STAFF HOLDER.
This tool is intended to take the place of tweezers in taking down or setting up full plate movements of any kind or size, full directions with each holder. Price..... $1 00



No. 4481.
EUREKA PALLET-SETTING TOOL.
It fills a long-felt want. No watch repairer can afford to be without it. Full directions sent with tool, for an easy and perfect method for "lining up" the escapement of a demoralized watch, including lock, drop and fork action. Nickel base, bronze clamp, handsomely finished.
Price $1 50

No. 4481½.
PUNCH REMOVER AND REPLACER.
Will fit punches in any staking tool.
Price..... $0 85



Full Size.
NO. 2594.

NO. 2594.
GOEGGEL'S PATENT BUSHING OR CLOSING HOLE PUNCHES.
Very handy and useful for repairing watches and clocks. It consists of two hollow counter-sunk fine steel punches, with a post in the lower punch. In using, fasten the lower punch in a vise and place the work over it. For watches, they are made in six sizes, from 57 to 70. For clocks, in six sizes, from 45 to 57. Sets of six in boxes, either watch or clock sizes.
Single Set, Plain $1 35
Single Set, Nickel-pla'd 1 70

NO. 2595. **CENTER PUNCH.**
Price ..... each, $0 15

NO. 2596.

NO. 2597. KARAT PUNCHES.

No. 2596.	Straight, 14, 16 and 18 Karat	each,	$0 25
" 2597.	Bent " " " " "	"	25
	Extra Fine Tempered Steel	"	35

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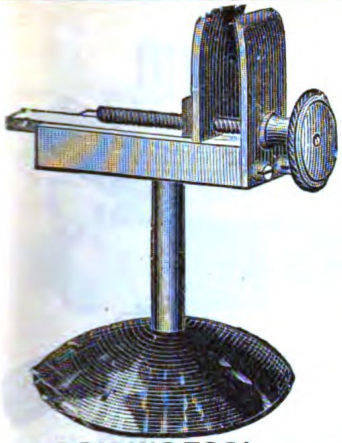
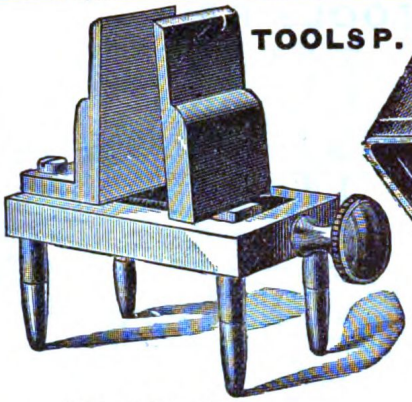
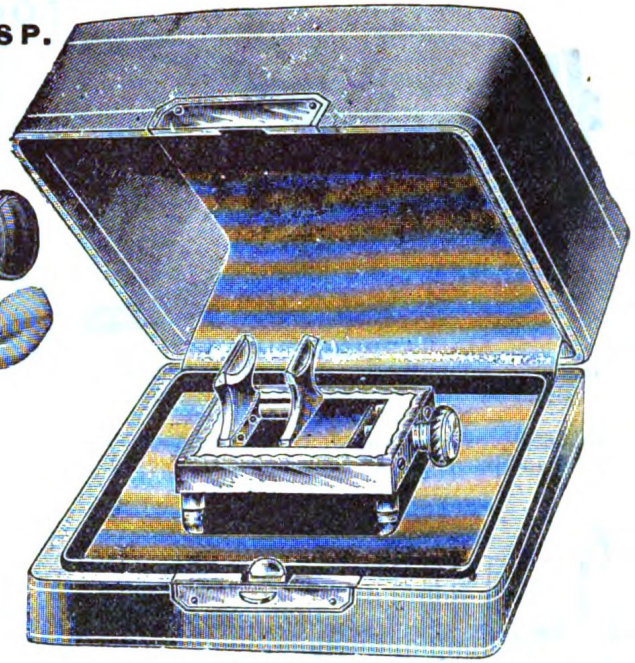


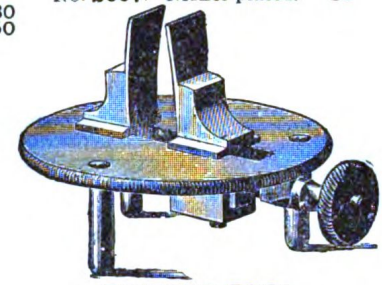
POISING TOOL.
No. 2600. Price.....$0 30
No. 2601. Nickel-plated. 50



POISING TOOL.
No. 2606. Price..... $0 65
No. 2607. Nickel-plated. 85

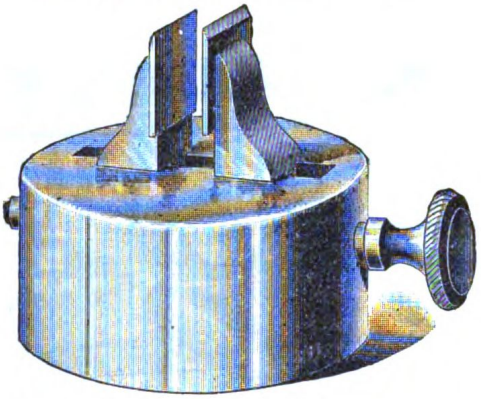


POISING TOOL.
No. 2612. Agate jaws.....$5 00
No. 2613. Garnet jaws..... 6 00

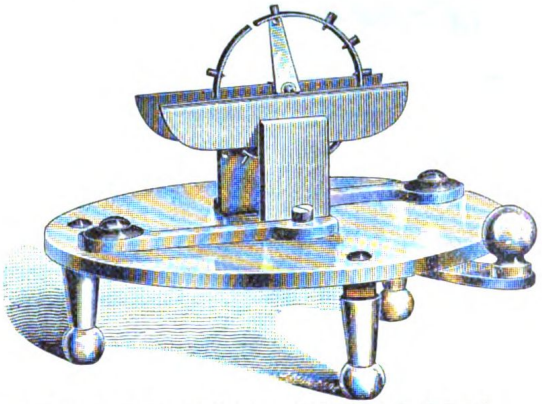


POISING TOOL.
No. 4482. Price.....$0 75
No. 4483. Nickel-plated..... 95

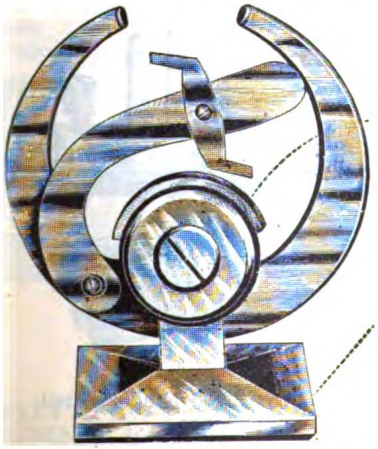
POISING TOOL.
No. 2604. Price.....$0 25
No. 2605. Nickel-plt. 40



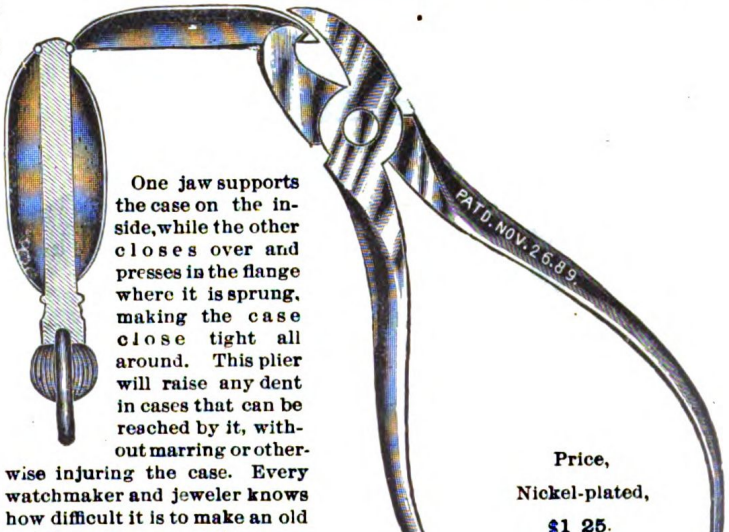
NO. 4483. POISING TOOL.
Ground knife-edge blades.
Price, nickel-plated.... ... $1 50



PATENT PARALLEL POISING TOOL.
No. 4484. Nickel-plated.....$1 75



CALIPER AND POISING TOOL.
No. 2614. In morocco box.....$1 25
No. 2615. " " nickel-plated.....1 50



One jaw supports the case on the inside, while the other closes over and presses in the flange where it is sprung, making the case close tight all around. This plier will raise any dent in cases that can be reached by it, without marring or otherwise injuring the case. Every watchmaker and jeweler knows how difficult it is to make an old watch case (worn and sprung out of shape) close tight. This tool makes the work easy.

Price, Nickel-plated, $1 25.

No. 2618. Coe's Patent Watch Case

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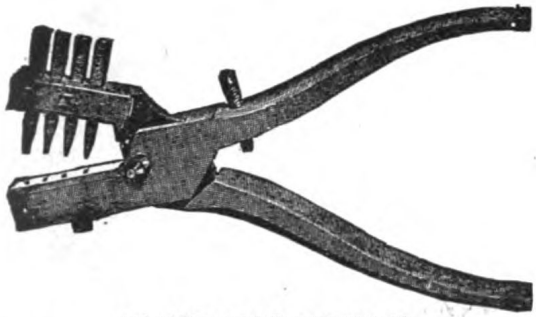
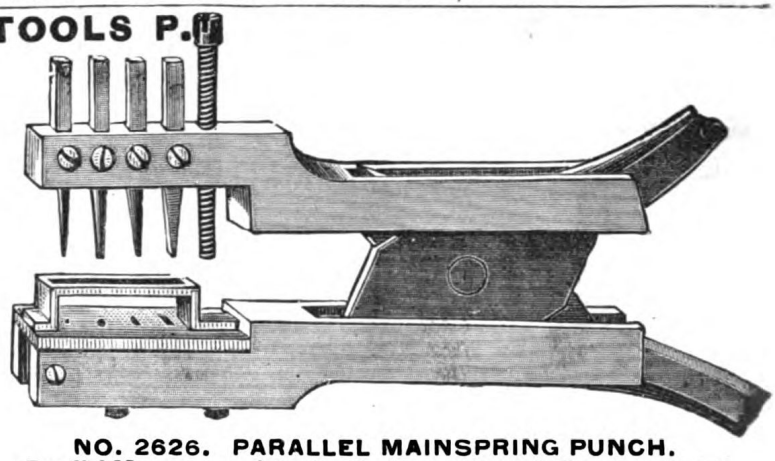


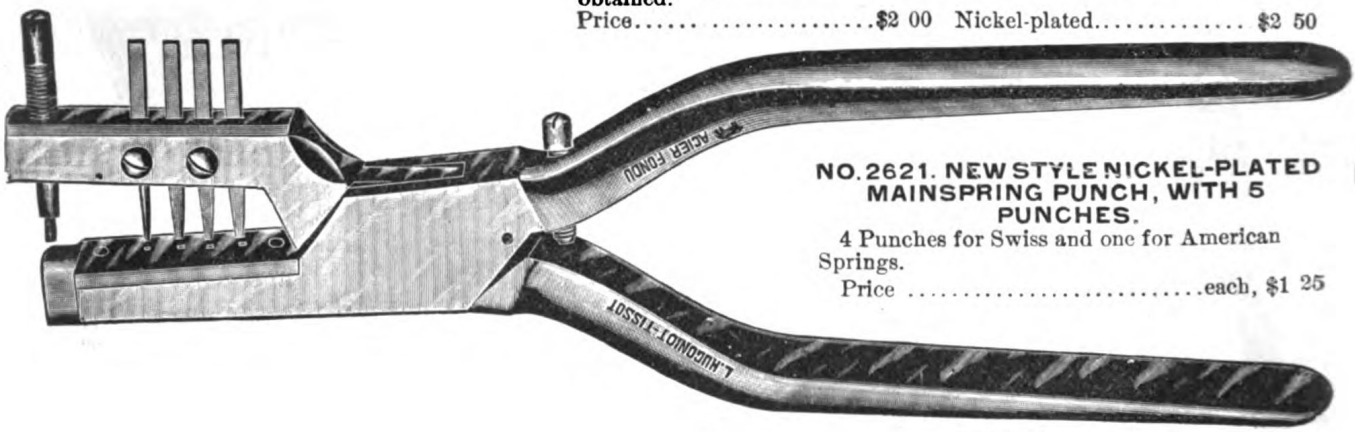
MAINSPRING PUNCH.

No. 2619. 3 Punches.....75 cents to $1 00
" 2620. 4 " ..... $1 00 to 1 25
Nickel-plated 25 cents extra.
No. 2620½. Same as above with 3 Punches and Barrel Hook Nickel-plated.....$0 75



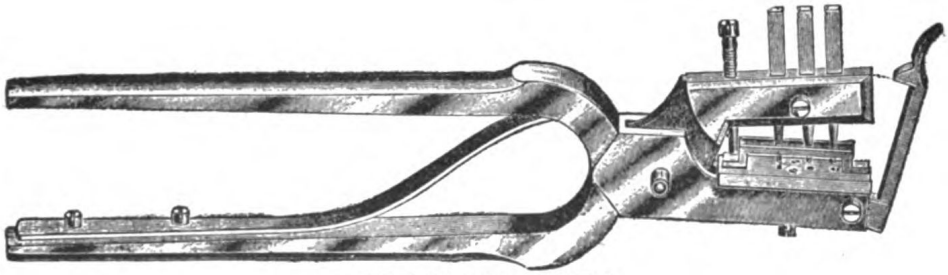
NO. 2626. PARALLEL MAINSPRING PUNCH.

Parallel Movement and the best in the market. 4 Punches, including a half-round one, for Waltham Mainspring. This is the only Mainspring Tool yet made for which duplicates of broken punches can be obtained.
Price..... .....$2 00 Nickel-plated..... $2 50



NO. 2621. NEW STYLE NICKEL-PLATED MAINSPRING PUNCH, WITH 5 PUNCHES.

4 Punches for Swiss and one for American Springs.
Price .....each, $1 25



MAINSPRING PUNCH.

No. 2622. 3 Punches.....price, $1 25 Nickel-plated $1 50
" 2623. 4 " .... " 1 50 " 1 85

MAINSPRING PUNCH.

No. 2624. 3 Punches Swiss.....$1 25
" 2625. Nickel-plated $1 50
No. 2627. 4 Punches Swiss.....$1 65
" 2629. New style O. W. Bullock's make, 3 punches..... 1 25
" 2630. 4 Punches.....$2 35
No. 2628. Nickel-plated.....$1 75
Nickel-plating 25 cents extra.

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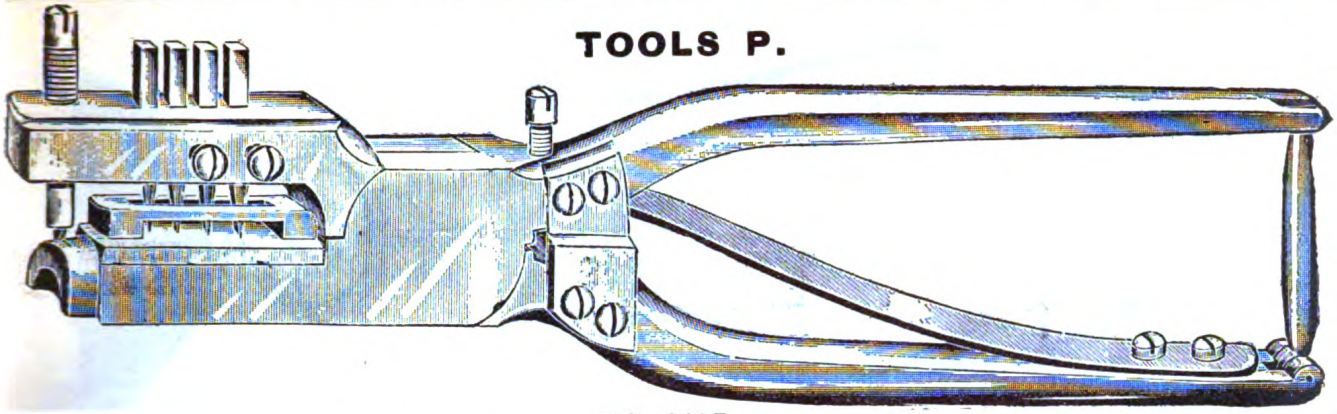


NO. 4485.

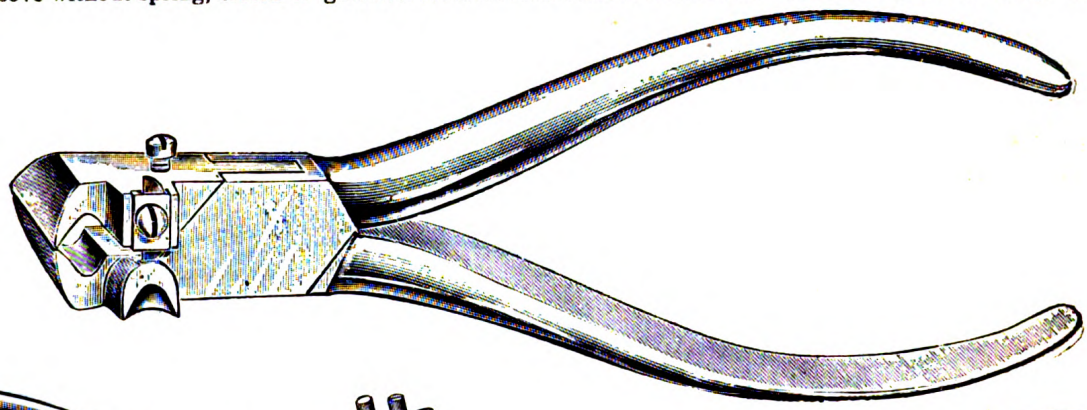
MAIN SPRING PLIER, with Barrel Hook Punch and Cutting Attachment Combined, Nickel-Plated. $2 00

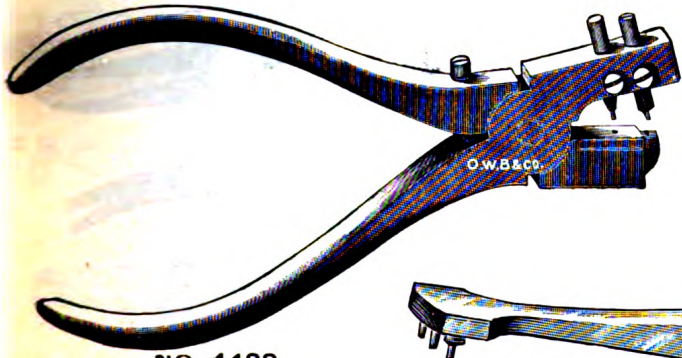
No. 4486 Same as above without spring, clutch or guard.....$1 50

NO. 4487.

CUTTING PLIER with Barrel Hook Punch Combined, Nickel-Plated.

Nickel-plated, $1 00





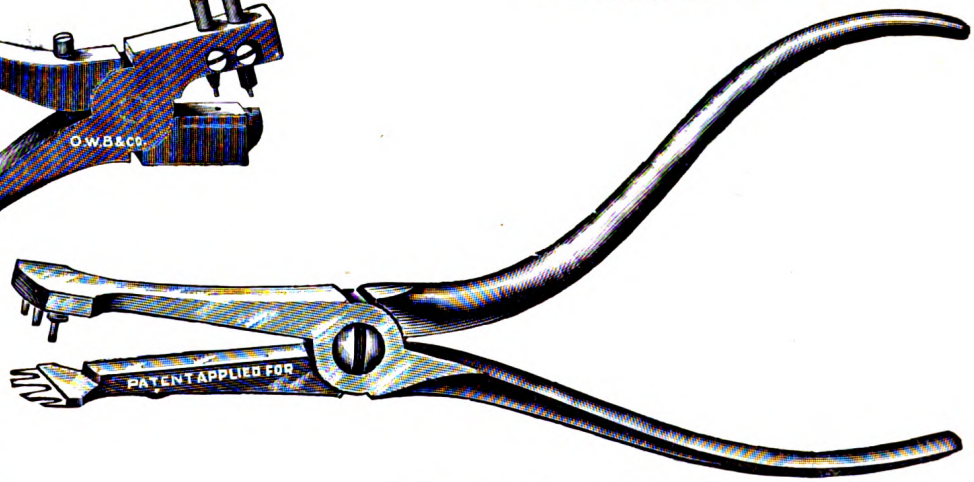
NO. 4488.

NEW STYLE MAIN SPRING AND BARREL HOOK PUNCH.

The best and cheapest Punch out.

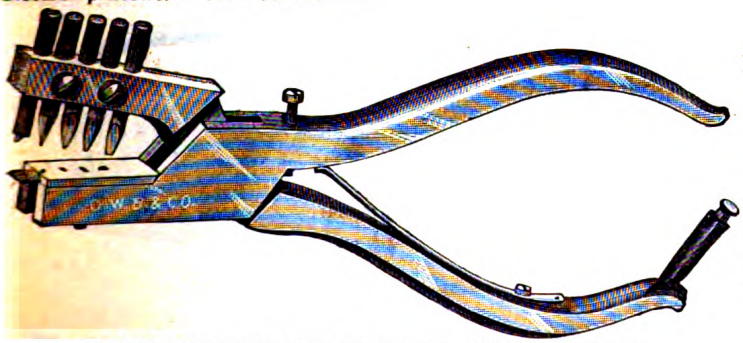
Price, plain.....$0 85

Nickel-plated.... .... 1 10



NO. 4489. HAND REMOVING PLIERS.

Nickel-plated.....$0 85

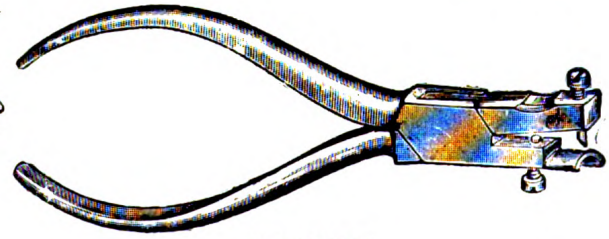


MAIN SPRING AND BARREL HOOK PUNCH.

One punch each, half round, round, barrel hook and two square. Best in the market and warranted.

No. 4490 Price, plain..... each, $1 25

No. 4491 " nickel-plated..... " 1 50



NO. 4492.

MAIN SPRING AND BARREL HOOK PLIER.

Price.....$0 60

" nickel-plated..... 0 85

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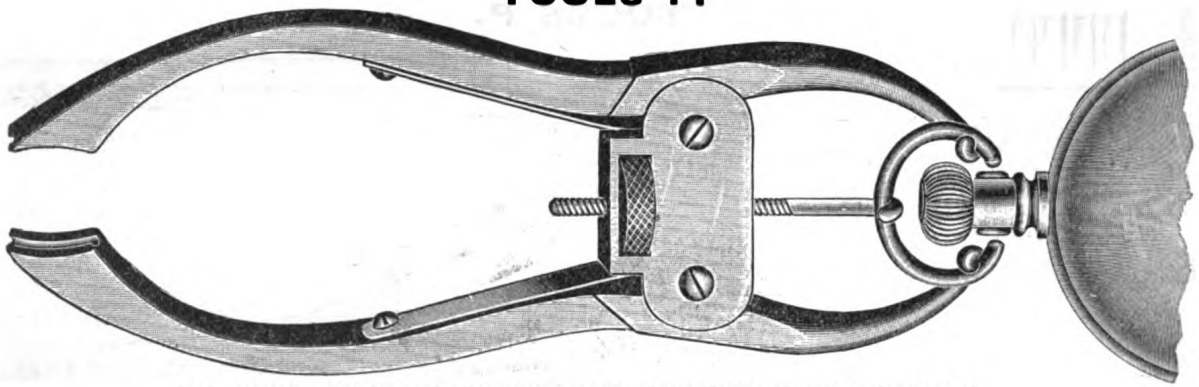
TOOLS P.

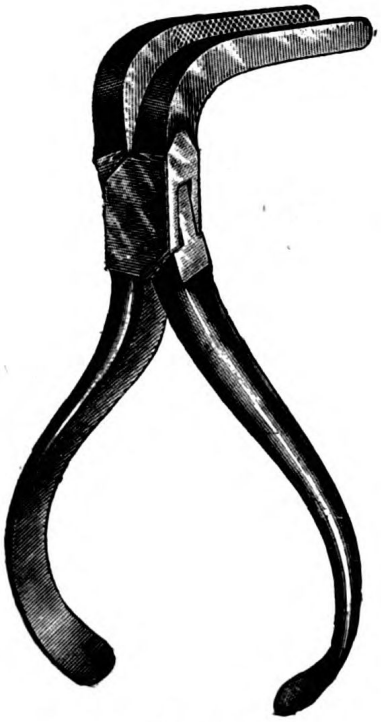


NO 4493. WILDT'S PATENT BOW TIGHTENER AND OPENER.

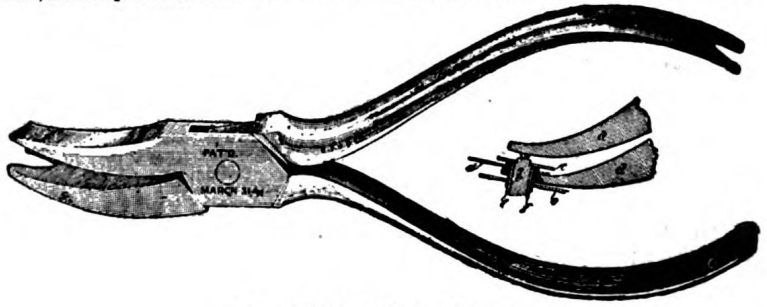
DIRECTIONS.—If bow is loose remove it with plyer as shown in illustration; then place it in grooves in handle end of plyer which are made for that purpose and press together so space between ends of bow is smaller than diameter of Pendant; then insert the plyer in the bow as illustrated and draw back the hook which is done by turning thumb screw just below the jaw of plyer, enough to clear the pendant, then insert in socket of pendant; turn thumb screw to left to release the plyer and your bow is so firm you cannot remove it by hand, and there is no danger of scratching or defacing bow or pendant in any manner. The tool is finely nickel-plated and of superior workmanship and durability.

Price.....$1 25

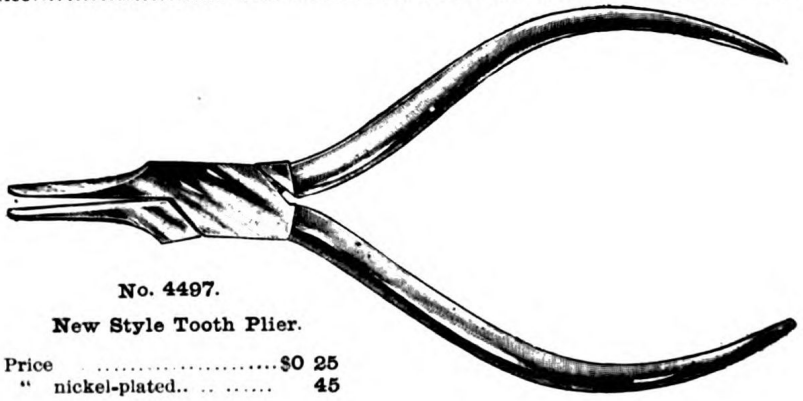
No. 4495.
Hollis's Nickel Clock Hand Remover.
No more breaking of hands or center pinions on nickel clocks. Removes hands and setting knobs with ease.
Price, nickel-plated.....$1 00



No. 4494.
Clock Pliers.
Price.....$0 25
Nickel-plated..... 45



No. 4496. Clock Pliers.
Price.....$1 00



No. 4497.
New Style Tooth Plier.
Price.....$0 25
" nickel-plated..... 45

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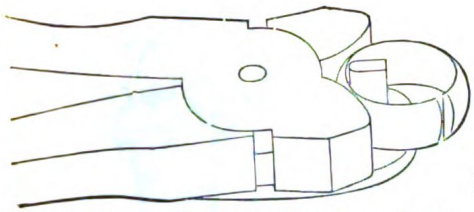
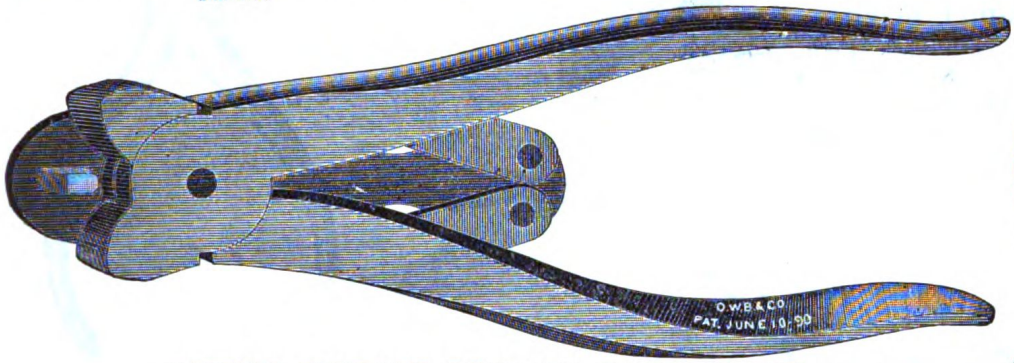
TOOLS P.



Cuts showing working of pendant bow and ring bender.

NO. 2638. PENDANT BOW TOOL.

Price..... ...$0 75 In case.....$1 00

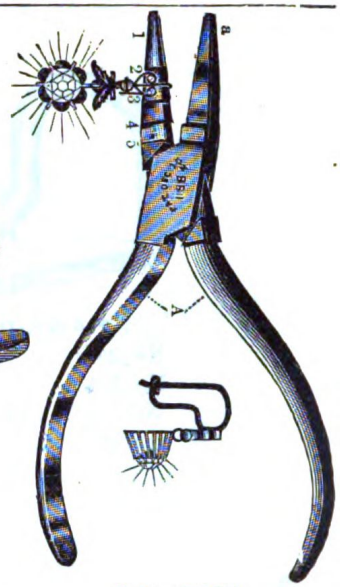


PATENT PENDANT BOW AND RING BENDER.

Entirely New.

By means of levers the slide is brought down between the jaws with such force that the stiffest ring can be closed up. The best working tool out.

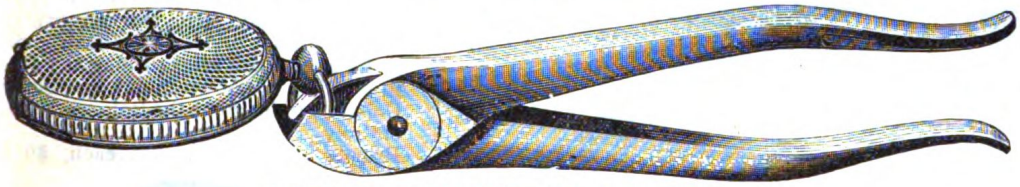
No. 2631. Plain .. ..each, $1 50 No. 2632. Nickel plated.....each, $1 80



NO. 2639. EAR HOOK PLIER.

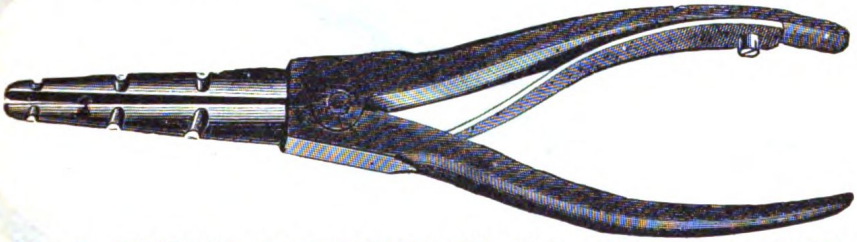
Three pliers combined in one; round nose, flat and cutting plier for ear wire, spectacles and small rings.

Each. $1 50
Nickel plated..... 1 75



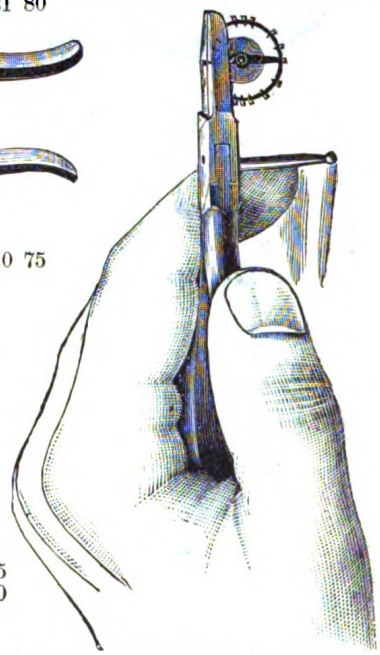
CLARK'S PENDANT BOW PLIERS.

No. 2633. Price..... .....each, $0 75



NO. 3. PENDANT BOW REMOVING AND EXPANDING PLIER.

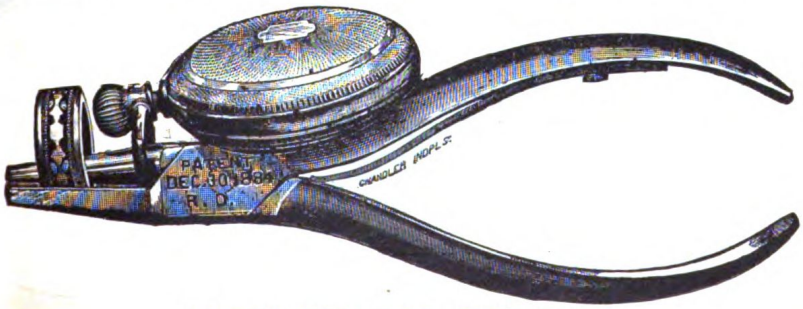
No. 2634. Price.....each, $0 35 Nickel plated.....each, $0 55
" 2635. Best quality..... " 45 " ..... " 60



RIES'S PATENT BALANCE PLIER.

For holding balance while putting in washer under screw. To lighten, as in poising or adjusting to temperature, turn the quarter or timing screws in or out. Rest the segment on the peg so that your screw will come opposite the guide mark on jaw. *No* scratching, *No* slipping, *No* bending. *Takes any size balance roller or hairspring. Need not be removed.*

No. 2640. Price $1 00



WATCH BOW AND RING PLIER.

No. 2636. Price ..... .each, $1 25 No. 2637. Nickel plated.....each, $1 50

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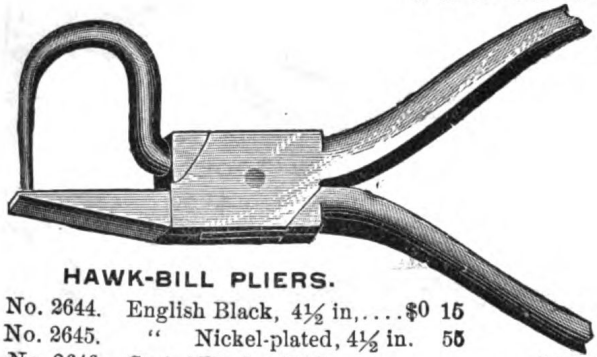
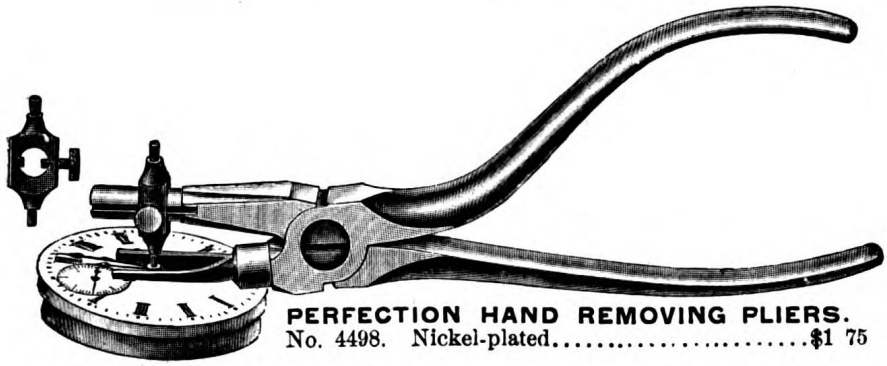
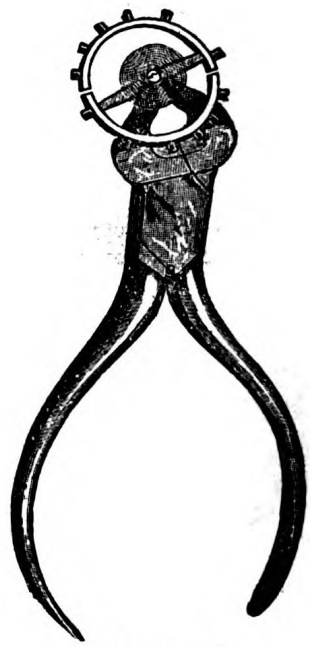


HAWK-BILL PLIERS.

No. 2644. English Black, 4½ in.....$0 15
No. 2645. " Nickel-plated, 4½ in. 55
No. 2646. Stubs' Black, 4½ in.....$0 75
No. 2647. " Nickel-plated, 4½ in..... 95



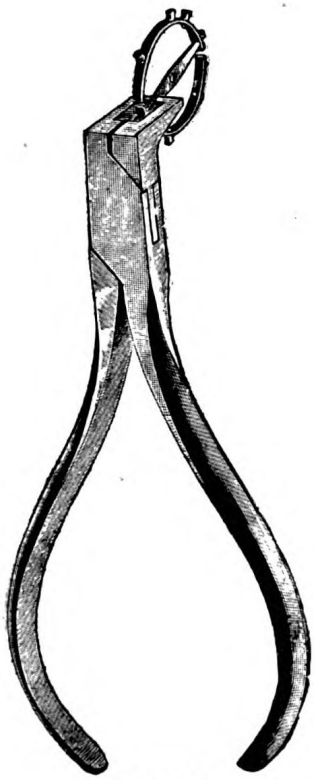
PERFECTION HAND REMOVING PLIERS.
No. 4498. Nickel-plated.....$1 75



Cut is Full Size.

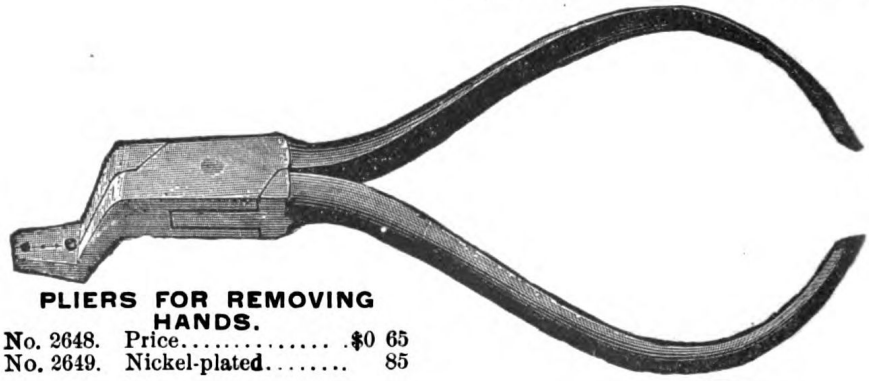
NO. 2646.
NEW BALANCE WHEEL PLIER.

This Plier works to perfection on all sizes of Balance Wheels. It is the only thing made that will remove the Collet without touching the Hairspring or Balance Arms after placing the Plier in position, as shown in cut, to remove Collet or to let go of the Balance Wheel entirely.
Price.....each, $0 90

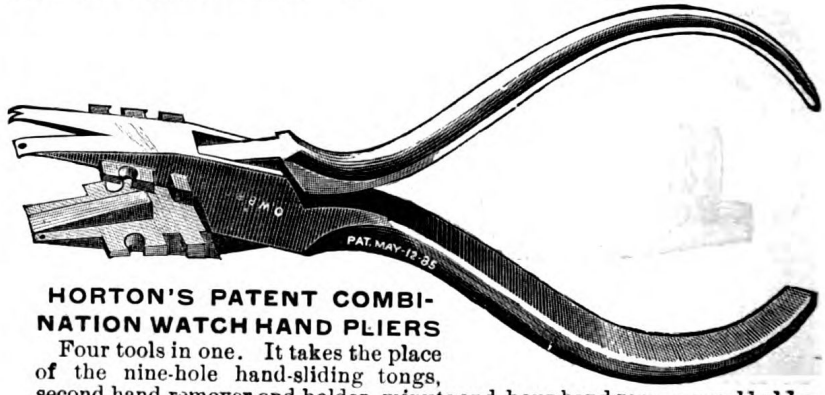


NO. 2652.
BALANCE WHEEL PLIERS.

Each.....$0 35
Nickel-plated..... 50



PLIERS FOR REMOVING HANDS.
No. 2648. Price..... .$0 65
No. 2649. Nickel-plated..... 85



HORTON'S PATENT COMBINATION WATCH HAND PLIERS

Four tools in one. It takes the place of the nine-hole hand-sliding tongs, second-hand remover and holder, minute and hour-hand remover and holder.
No. 2650. Price, plain.....each, $1 25 Nickel-plated..... each, $1 50

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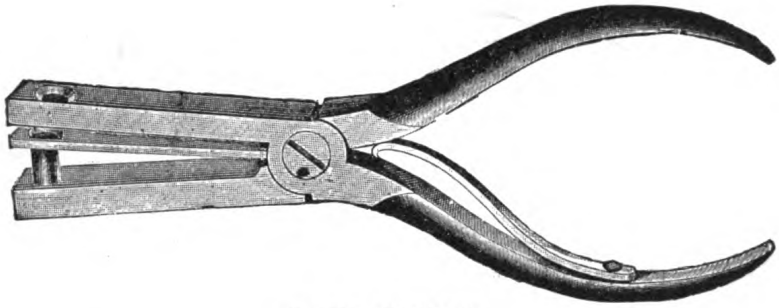
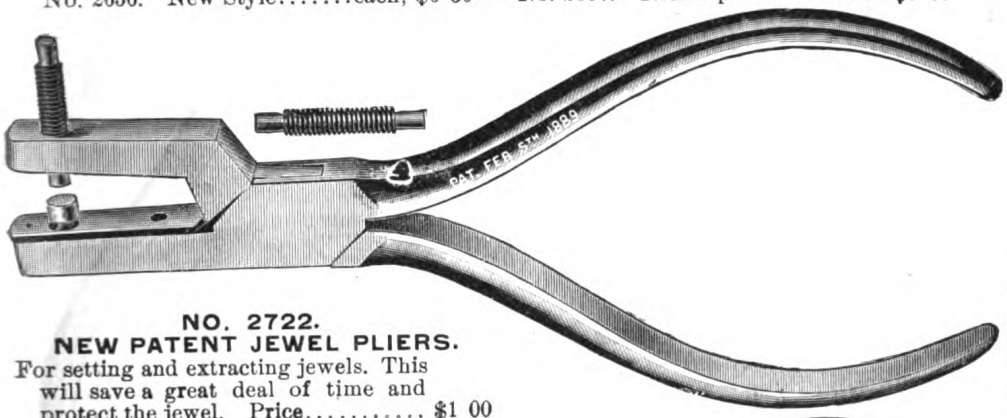
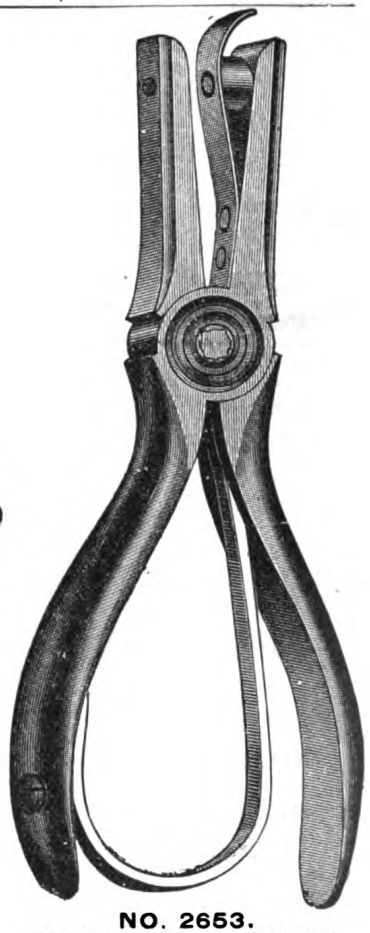


CARD PUNCH.

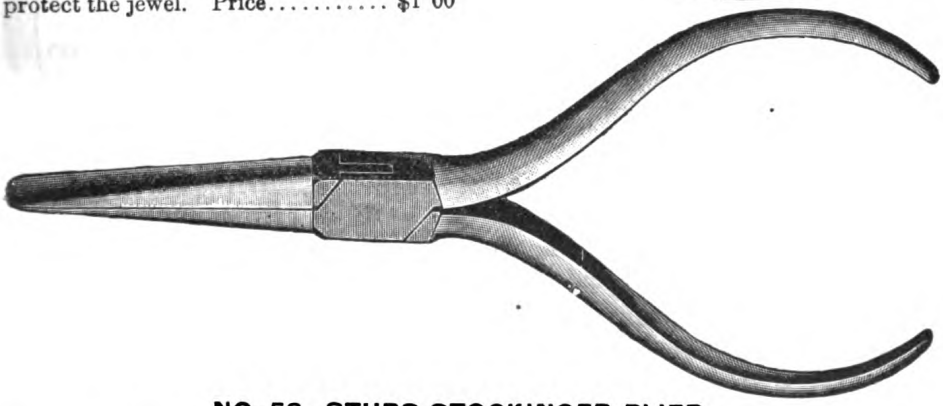
No. 2656. New Style.....each, $0 50 No. 2657. Nickel-plated.....$0 65



NO. 2722.
NEW PATENT JEWEL PLIERS.
For setting and extracting jewels. This will save a great deal of time and protect the jewel. Price..... $1 00



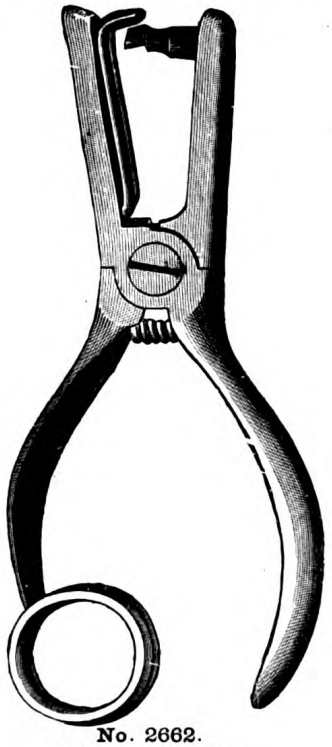
NO. 2653.
EUREKA CARD PUNCH.
The above card punch has extra long jaws.
Nickel-plated.....each, $0 75



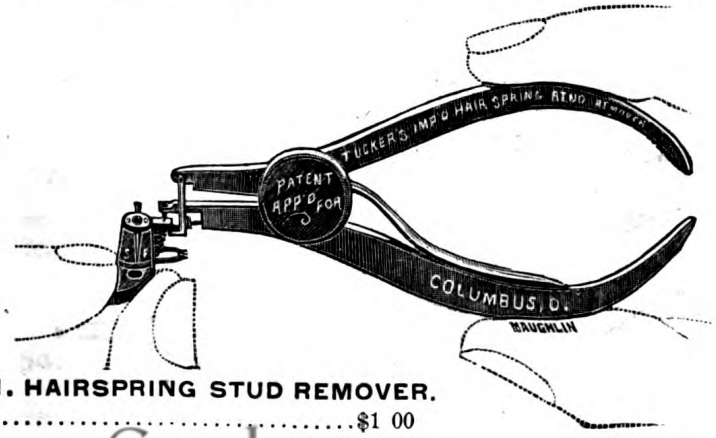
NO. 53. STUBS STOCKINGER PLIER.

No. 2658. Price.....each, $0 45 No. 2660. Best Quality.....each, $0 50
" 2659. " Nickel-plated " 65 " " N.-pla.. " 70

Jaws are polished and rounded on top and flat on the inside. For Jewelers' use and for opening and closing Jump-rings, etc., so as not to mar the finish of the gold.



No. 2662.
CARD PUNCH.
With Guard.....each, $1 75



NO. 2661. HAIRSPRING STUD REMOVER.
Price.....$1 00

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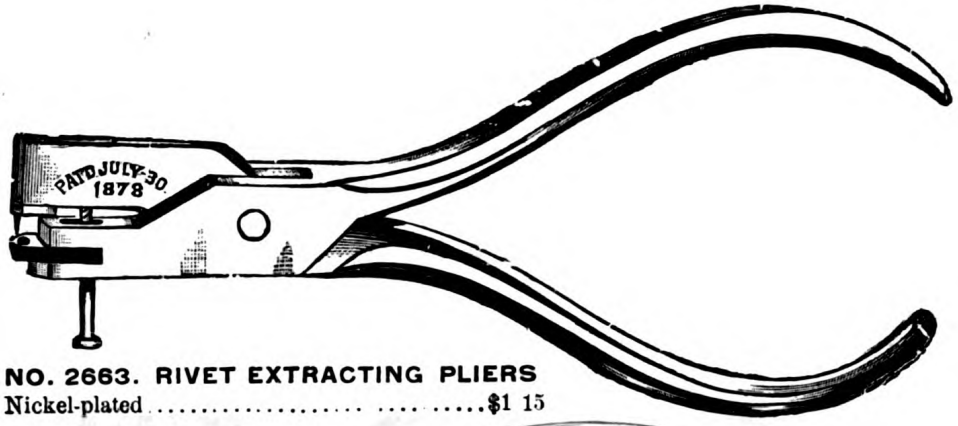
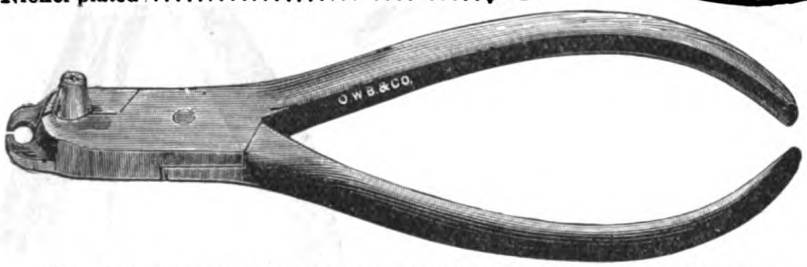


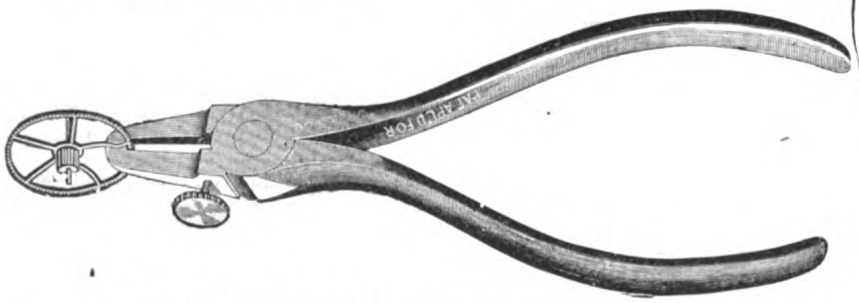
NO. 2663. RIVET EXTRACTING PLIERS

Nickel-plated $1 15



NO. 18. WATCH HAND AND CANNON PINION PLIERS.

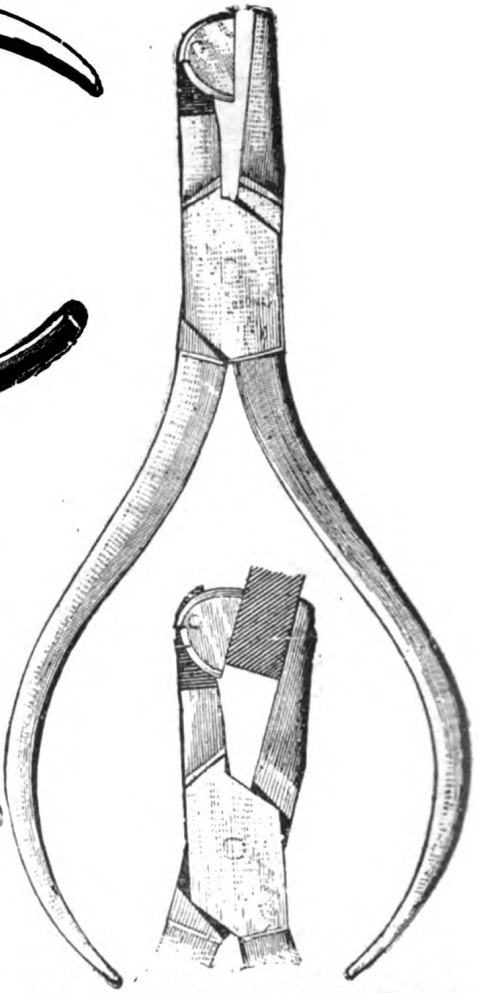
No. 2664.	Plain	$0 35	No. 2666.	Best Quality	$0 40
" 2665.	Nickel-plated	40	" 2667.	" "	50



NO. 2668. NEW WHEEL TRUING PLIER.

Price $0 70

Nickel-plated 90



NO. 2669. NEW PARALLEL PLIER.

Jaws adjust themselves to clamp evenly articles up to $\frac{5}{16}$ inch.

Price $0 75

NO. 2670. COMBINATION PLIER.

Jewelers' Combination Pliers, Flat, Cutting, Rivet Extractor and Pin Pusher.

Price, Nickel-plated ..... each, $0 75

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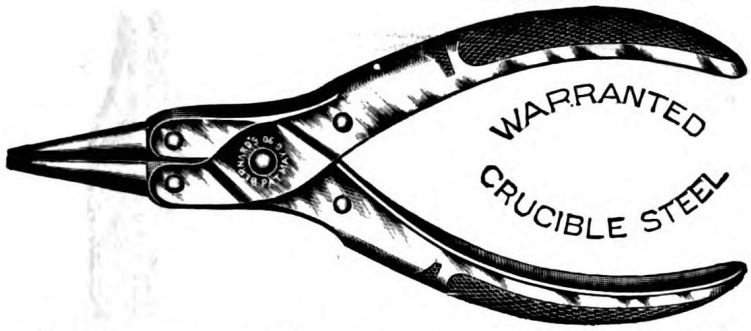
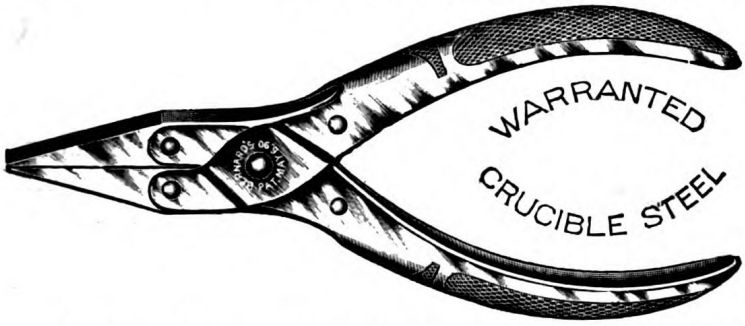


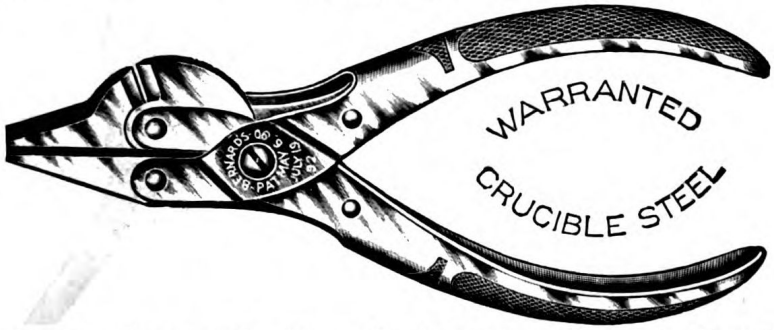
Bernard's New Open Throat Round Nose Parallel Pliers.

No. 4499.	3½-inch,	Nickel-plated	Each,	$0 60
No. 4500.	4 "	"	"	0 70
No. 4501.	4½ "	"	"	0 70
No. 4502.	5 "	"	"	0 75



Bernard's New Open Throat Flat Nose Parallel Pliers.

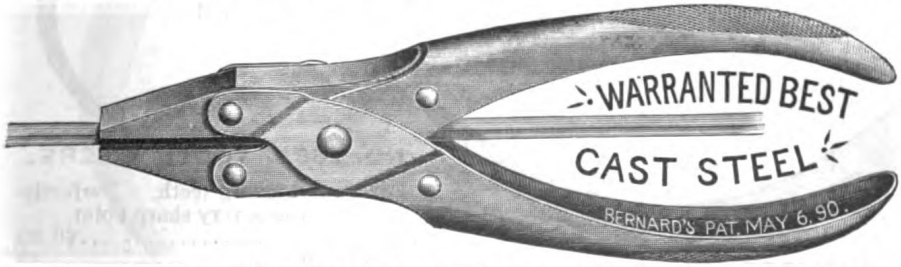
No. 4503.	3½-inch,	Nickel-plated	Each,	$0 60
No. 4504.	4 "	"	"	0 70
No. 4505.	4½ "	"	"	0 70
No. 4506.	5 "	"	"	0 75



No. 4507. Bernard's New Style Open Throat Flat Nose and Cutting Pliers Combined.

This is the best cutting and flat combination plier made.

Price, Nickel-plated 5-inch..... Each, $1.25



No. 2654. The Bernard Pliers. Open Throat Flat Parallel Pliers.

Price, 6-inch..... Each, 0 90

No. 4508.

Swedish Pliers.

The best pliers ever introduced into this country.

Price, 3½, 4, 4½-in.
Each.....$0 40

END OR SIDE CUTTING SWEDISH PLIERS.

The nippers will cut better and stand more usage than any other plier made.

No. 4509. Side cutting, 3½, 4, 4½, 5-in.
Each..... $0 50
No. 4510. End cutting, 3½, 4, 4½, 5-in.
Each $0 50

Nickel-plating, extra, 25c.

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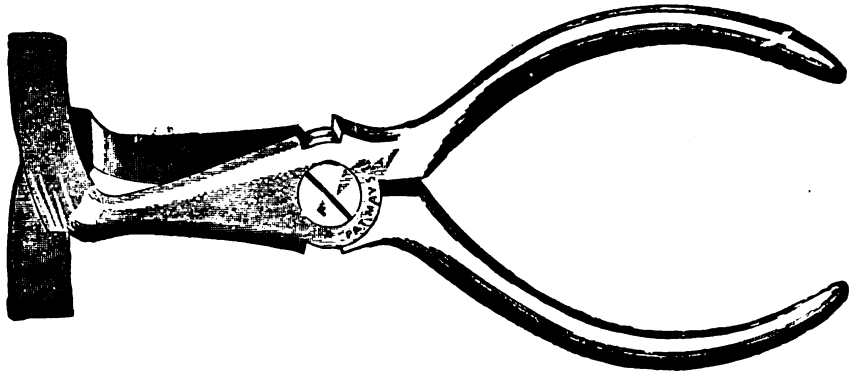
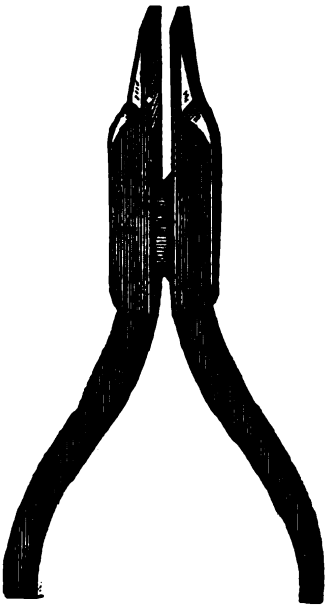


Cut ¾ Size.

PATENT CASE SPRING PLIERS.

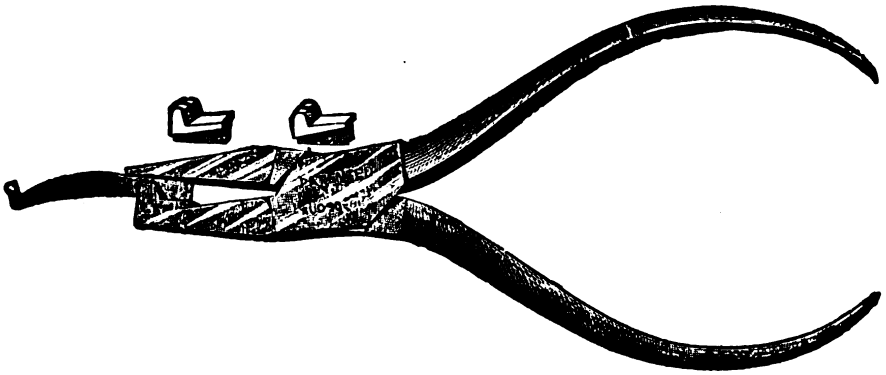
Made in two sizes for Ladies' and Gentlemen's Cases.

No. 2671. Nickel plated.....$0 75
" 2672. Same as above with spring, an improvement on above, Nickel-plated 1 00



PARALLEL PLIER.

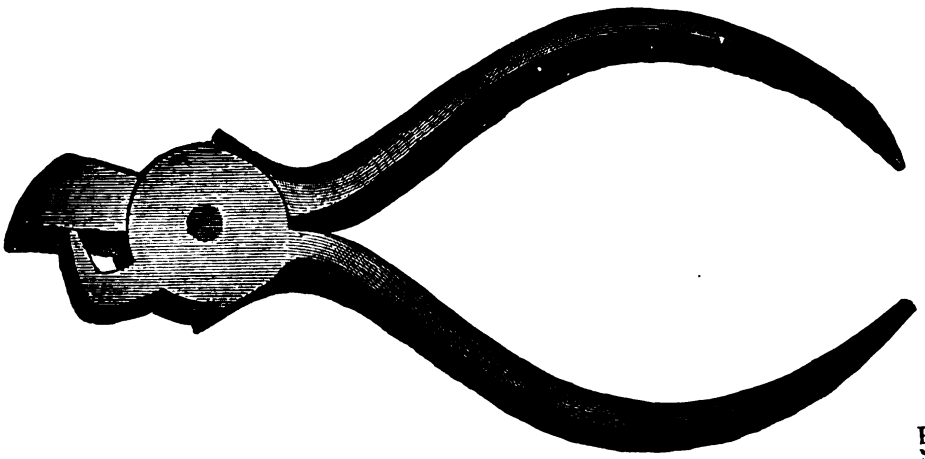
No.			
2675.	4–4½ in.	black.....	$1 00
2676.	5 "	"	1 20
2677.	6½ "	"	1 35
2678.	4–4½ "	nickel plated....	1 20
2679.	5 "	"	1 45
2680.	6½ "	"	1 60



PATENT CASE SPRING PLIERS.

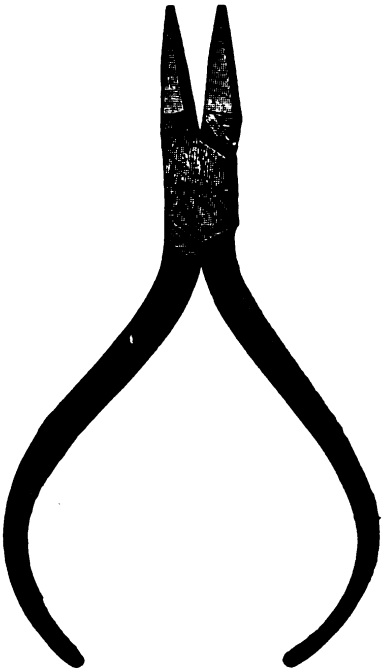
For holding case springs of various kinds and sizes while being filed and fitted, and also while being fastened in the case.

No. 2673. Nickel plated.....$0 80



CASE SPRING PLIERS.

No. 2674. Plain.....$0 40 Nickel plated.....$0 45



NO. 2681. TOOTH PLIERS.

For straightening teeth. Perfectly flat. Has a very sharp point.

Plain.....$0 25
Nickel plated..... 45
Best quality finish..... 35
Nickel plated, best quality..... 55

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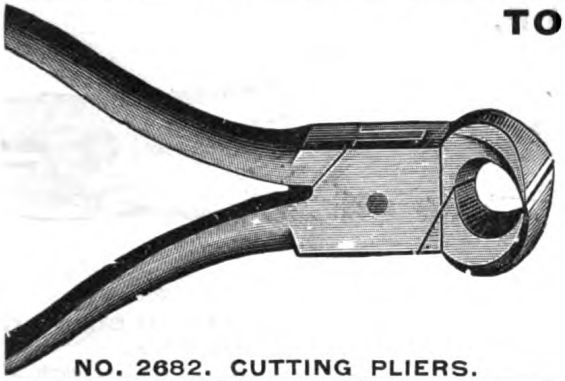
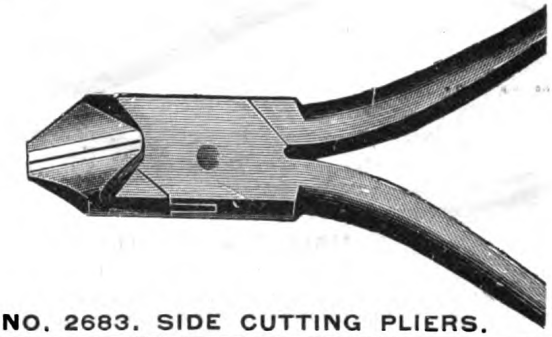
TOOLS P.

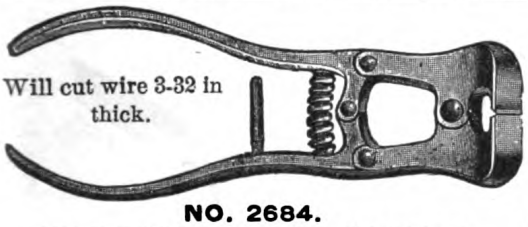


NO. 2682. CUTTING PLIERS.



NO. 2683. SIDE CUTTING PLIERS.

Polished Swiss.		English.		Stubs'.		Polished Swiss.		English.		Stubs'.	
EACH.	N. P.	EACH.	N. P.	EACH.	N. P.	EACH.	N. P.	EACH.	N. P.	EACH.	N. P.
3 in.. $0 40	$0 60	3 in.. $0 50	$0 70	3 in.. $0 85	$1 10	3 in.. $0 40	$0 60	3 in.. $0 50	$0 70	3 in.. $0 85	$1 10
3½in.. 40	60	3½in.. 50	70	3½in.. 85	1 10	3½in.. 40	60	3½in.. 50	70	3½in.. 85	1 10
4 in.. 40	60	4 in.. 50	70	4 in.. 85	1 10	4 in.. 40	60	4 in.. 50	70	4 in.. 85	1 10
4½in.. 40	60	4½in.. 50	75	4½in.. 85	1 10	4½in.. 40	60	4½in.. 50	75	4½in.. 85	1 10
5 in.. 50	75	5 in.. 65	90	5 in.. 90	1 15	5 in.. 50	75	5 in.. 65	90	5 in.. 90	1 15
5½in.. 55	80	5½in.. 75	1 00	5½in.. 95	1 20	5½in.. 65	80	5½in.. 75	1 00	5½in.. 95	1 20
6 in.. 60	85	6 in.. 75	1 00	6 in.. 1 00	1 25	6 in.. 60	85	6 in.. 75	1 00	6 in.. 1 00	1 25

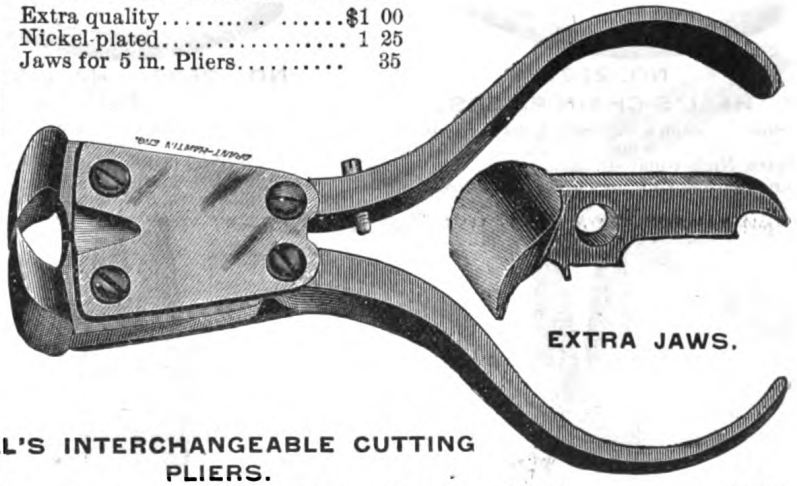


Will cut wire 3-32 in thick.

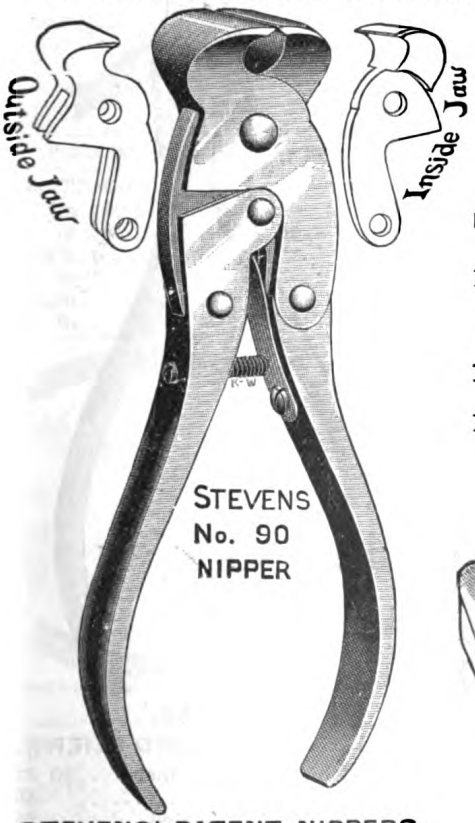
NO. 2684.
THE GIANT PATENT NIPPERS.

No. 2684. GIANT NIPPERS.

Extra quality..... .....$1 00
Nickel-plated..... 1 25
Jaws for 5 in. Pliers..... 35



EXTRA JAWS.



STEVENS' PATENT NIPPERS.

No. 2685. Polished.....$1 25
Nickel-plated..... 1 50

HALL'S INTERCHANGEABLE CUTTING PLIERS.

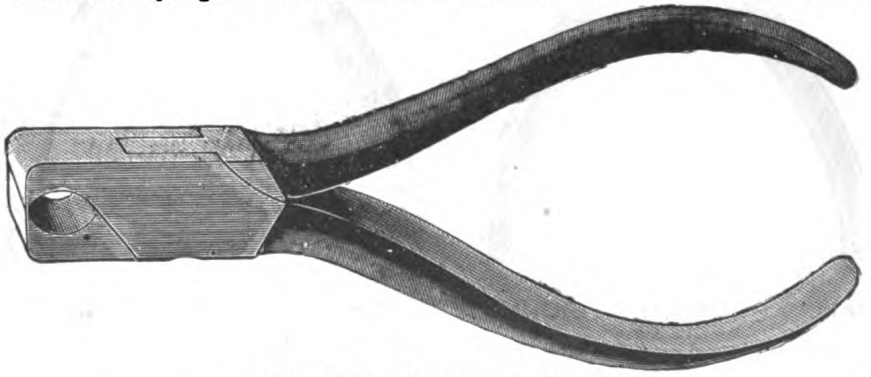
No. 2686. 4 inch.....$0 80		No. 2689. 5 inch.....$0 90	
" 2687. 4 " Nickel-plated.. 1 10		" 2690. 5 " Nickel-plated.. 1 25	
" 2688. 7 " 1 35		" 2691. 7 " " .. 1 60	

Price of Jaws for Interchangeable Cutting Pliers Extra Each.

No. 2692. 4 inch..$0 25 No. 2693. 5 inch..$0 25 No. 2694. 7 inch..$0 35

Nickel plating extra, 4 and 5 inch, $0 10; 7 inch $0 15

No. 2695. Springs.....each, $0 10 No. 2696. Screws.....each, $0 10



NEW END CUTTING PLIERS.

No. 2697. 3, 3½, 4 and 4½ inch.....each, $0 35
Nickel-plated..... " 50

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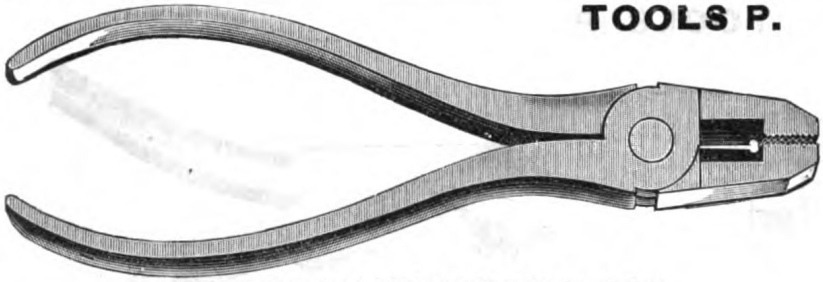
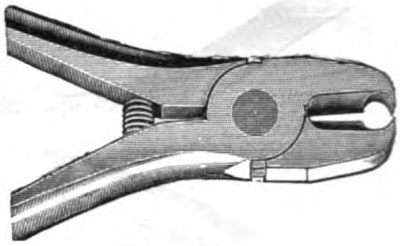


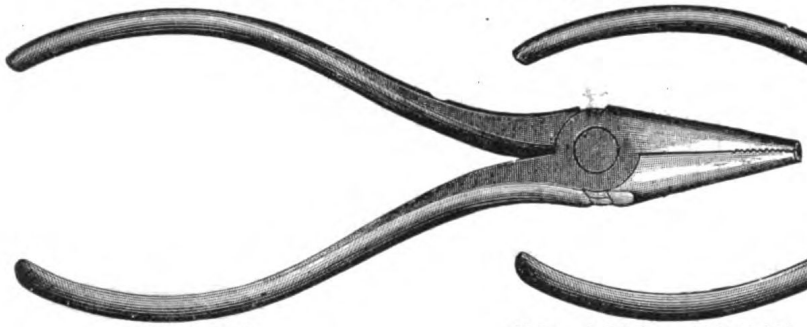
2698. HALL'S SIDE-CUTTING PLIERS.

Price..... each, 4, 4½-inch, $0 50; 5, 5½-inch, $0 55; 6-inch, $0 65
Nickel-plating .. " extra..... 20
The most powerful side cutter made.



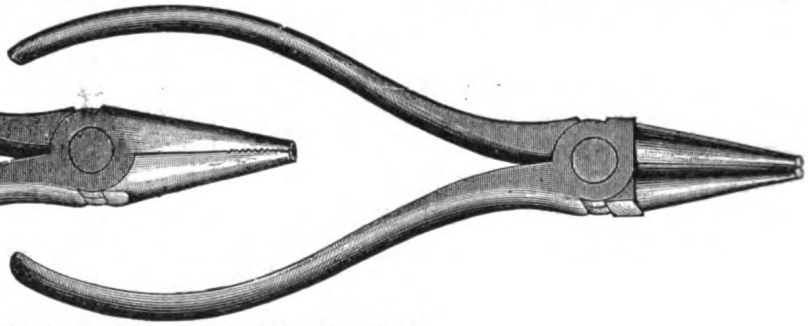
NO. 2700.
COMBINATION CUTTING PLIERS.

Price.....each, $0 75



NO. 2701.
HALL'S CHAIN PLIERS.

Price.....each 3, 3½-inch, 4, 4½-inch, $0 35
" ..... " 5-inch.... 40
Extra, Nickel-plated 20
Same, with Spring, as shown in cut No. 2702, extra, 5c.

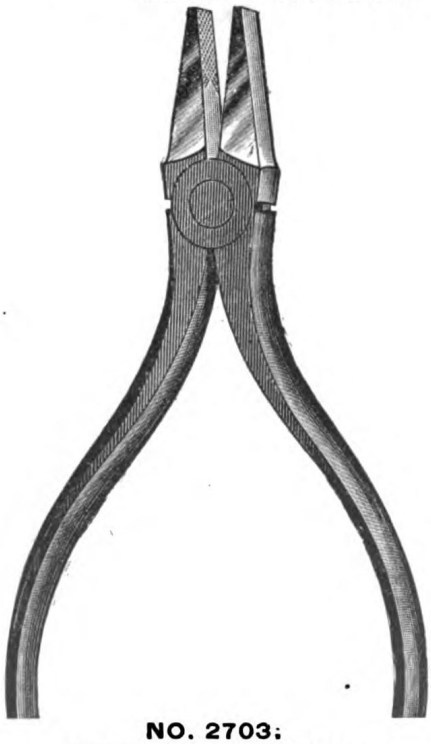


NO. 2699. HALL'S ROUND PLIERS.

Price.....each, 3, 3½-inch, 4, 4½-inch, $0 35
" ..... " 5-inch 40
Extra, Nickel-plated 20
Same, with Spring, as shown in cut No. 2702, extra, 5 . State size wanted.

NO. 2702.
HALL'S ROUND, HALF-ROUND, PLIERS.
(With Spring.)

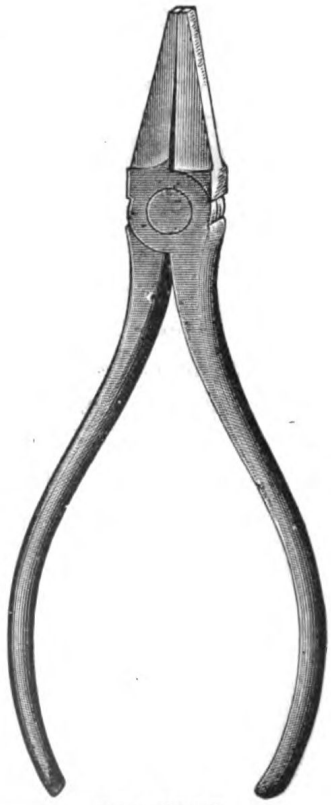
3	inch....	$0 40	Nickel-pla.,	$0 60
3½	" ...	40	" "	60
4	"	40	" "	60
4½	"	40	" "	60
5	"	45	" "	65



NO. 2703.
HALL'S FLAT PLIERS.

3	inch....	$0 35	Nickel-pla.,	$0 55
3½	" .. .	35	" "	55
4	"	35	" "	55
4½	" . ..	35	" "	55
5	"	40	" "	60

No. 2704. Same, with Spring, as shown in cut 2702, extra, 5c.



NO. 2705.
HALL'S HALF-ROUND PLIERS.

Each, 3, 3½, 4 and 4½ inch.....$0 35
" 5 inch..... 40
" Extra, nickel-plated 20

No. 2706. Same, with Spring, as shown in cut No. 2702, extra, 5c.

☞State size and style wanted.

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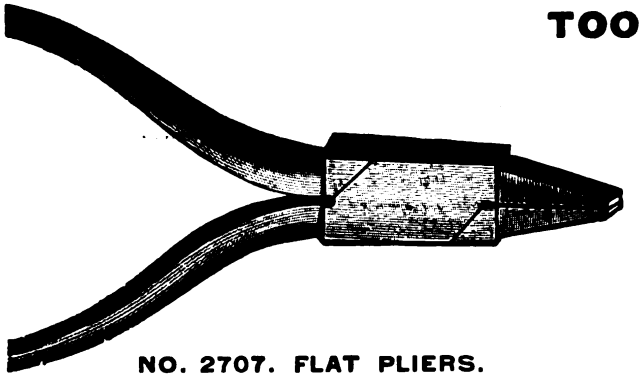
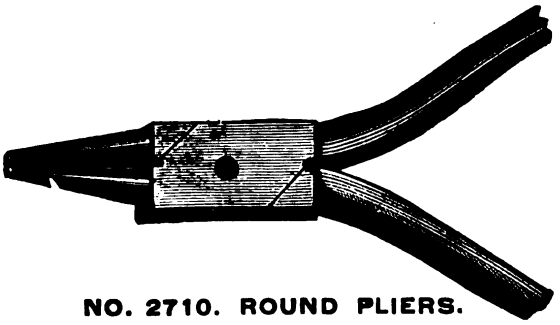


NO. 2707. FLAT PLIERS.



NO. 2710. ROUND PLIERS.

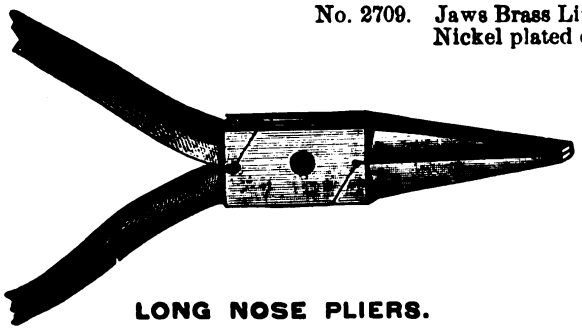
Polished Swiss.	Each.	N. P.	English.	Each.	N. P.	Stubs'.	Each.	N. P.
3 in..	$0 15	$0 35	3 in..	$0 30	$0 50	3 in..	$0 45	$0 65
3½ in..	15	35	3½ in..	30	50	3½ in..	45	65
4 in..	15	35	4 in..	30	50	4 in..	45	65
4½ in..	15	35	4½ in..	30	50	4½ in..	45	65
5 in..	20	40	5 in..	40	60	5 in..	50	75
5½ in..	25	50	5½ in..	45	65	5½ in..	60	85
6 in..	25	50	6 in..	50	75	6 in..	75	1 00

Polished Swiss.	Each.	N. P.	English.	Each.	N. P.	Stubs'.	Each.	N. P.
3 in..	$0 15	$0 35	3 in..	$0 30	$0 50	3 in..	$0 45	$0 65
3½ in..	15	35	3½ in..	30	50	3½ in..	45	65
4 in..	15	35	4 in..	30	50	4 in..	45	65
4½ in..	15	35	4½ in..	30	50	4½ in..	45	65
5 in..	20	40	5 in..	40	60	5 in..	50	70
5½ in..	25	50	5½ in..	45	70	5½ in..	60	85
6 in..	25	50	5 in..	50	75	6 in..	75	1 00

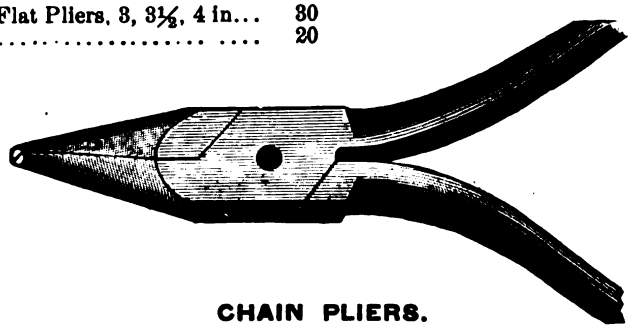
No. 2708. Best quality Swiss Flat Pliers, 3 to 4½ in... $0 20
5 to 6 in..... $0 30, $0 35, 40

No. 2711. Best quality Swiss Round Pliers, 3½–4½ in. 20
5 to 6 in..... $0 30, $0 35, 40

No. 2709. Jaws Brass Lined, Flat Pliers, 3, 3½, 4 in... 30
Nickel plated extra..... 20



LONG NOSE PLIERS.

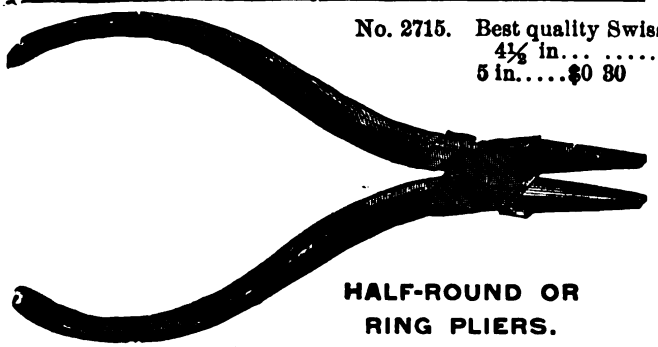


CHAIN PLIERS.

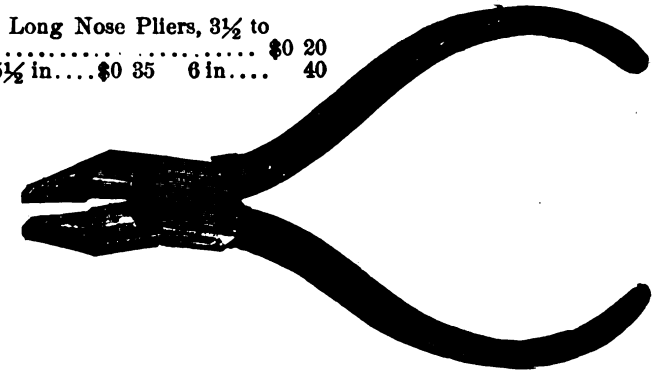
Polished Swiss.	Each.	N. P.	English.	Each.	N. P.	Stubs'.	Each.	N. P.
No. 2712.			No. 2713.			No. 2714.		
3½ in..	$0 15	$0 35	3½ in..	$0 30	$0 50	3½ in..	$0 45	$0 65
4 in..	15	35	4 in..	30	50	4 in..	45	65
4½ in..	15	35	4½ in..	30	50	4½ in..	45	65
5 in..	20	40	5 in..	40	60	5 in..	50	75
5½ in..	25	50	5½ in..	45	70	5½ in..	60	85
6 in..	25	50	6 in..	50	75	6 in..	75	1 00

English.	Each.	N. P.	Stubs'.	Each.	N. P.
No. 2716.			No. 2717.		
4 in.....	$0 30	$0 50	4 in.....	$0 45	$0 65
4½ in.....	30	50	4½ in.....	45	65
5 in.....	40	60	5 in.....	55	80
5½ in.....	45	70	5½ in.....	65	85

No. 2715. Best quality Swiss Long Nose Pliers, 3½ to 4½ in..... $0 20
5 in.....$0 30 5½ in....$0 35 6 in.... 40



HALF-ROUND OR RING PLIERS.



NO. 2720. BELL PLIERS.

Flat and Cutting Combined.

P. S. Stubs, 4½ in.....each, $0 75 Nickel plated, $1 00
" 5 in..... " 85 " 1 10
" 5½ in..... " 95 " 1 20

English.	Each.	N. P.	Stubs'.	Each.	N. P.
No. 2718.			No. 2719.		
4 in.....	$0 30	$0 50	4 in.....	$0 45	$0 65
4½ in.....	30	50	4½ in.....	45	65
5 in.....	40	65	5 in.....	50	75
5½ in.....	45	70	5½ in.....	60	85
6 in.....	50	75	6 in.....	75	1 00

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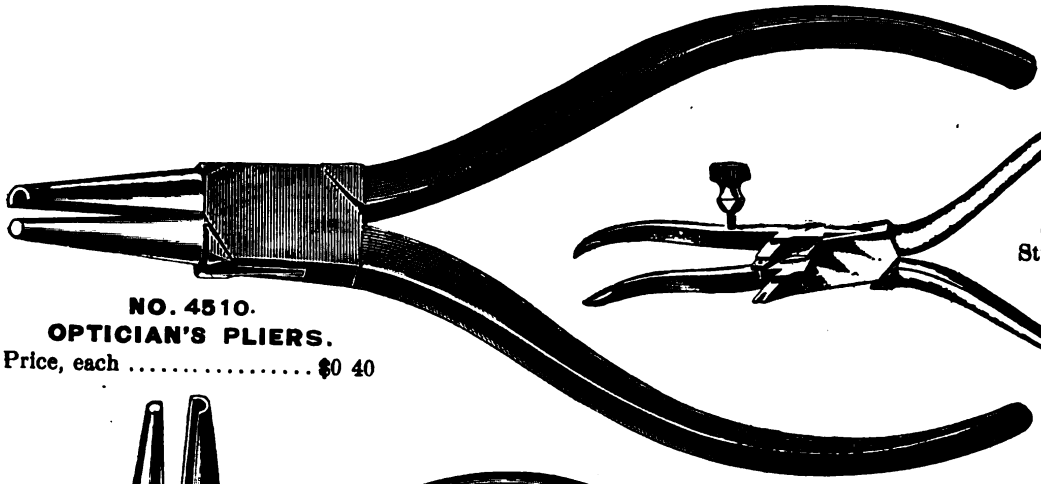
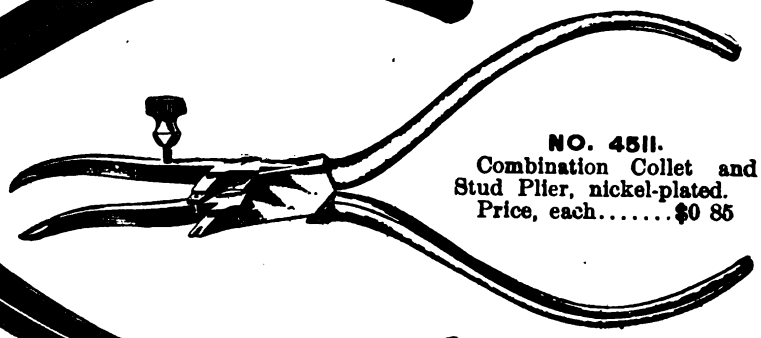
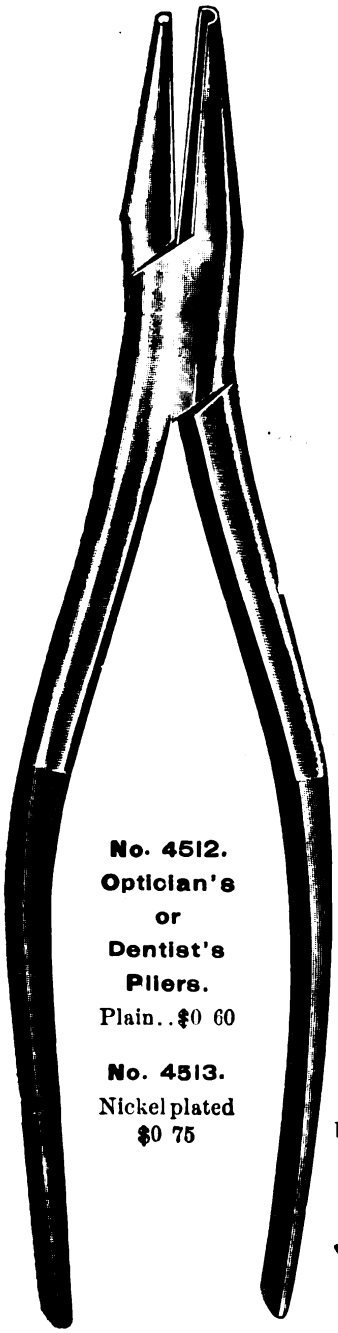
TOOLS P.



NO. 4510.
OPTICIAN'S PLIERS.
Price, each $0 40

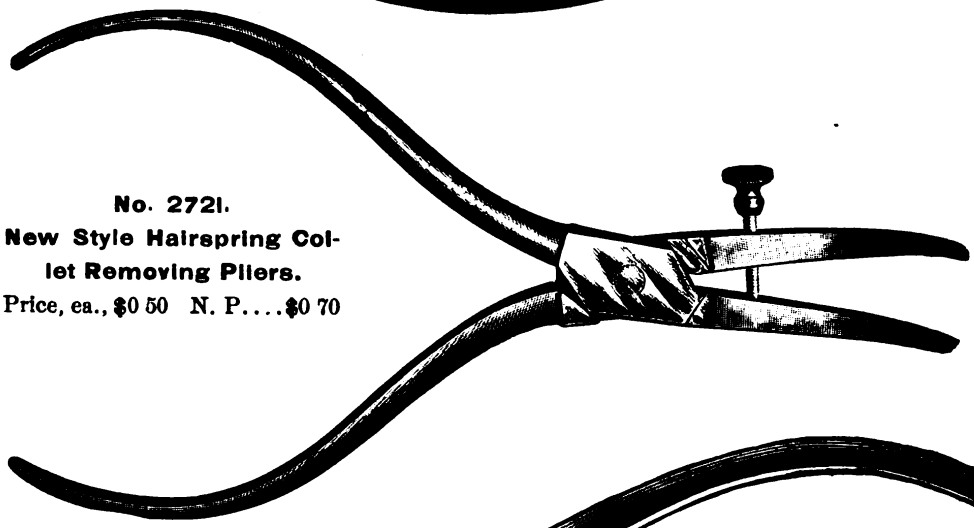


NO. 4511.
Combination Collet and Stud Plier, nickel-plated.
Price, each.....$0 85

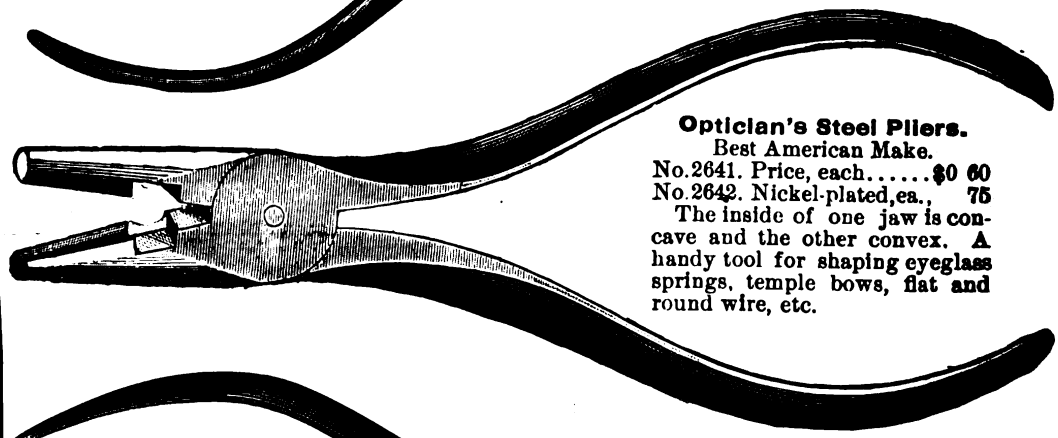


No. 4512.
Optician's or Dentist's Pliers.
Plain..$0 60

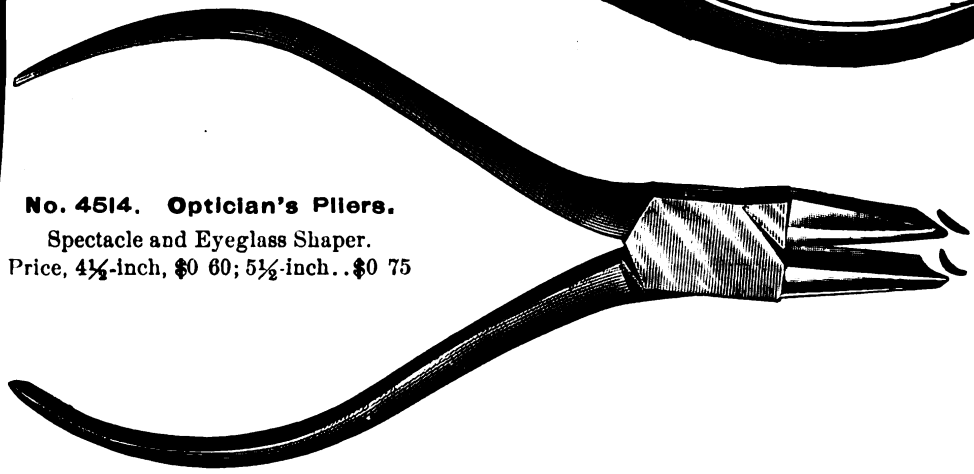
No. 4513.
Nickel plated
$0 75



No. 2721.
New Style Hairspring Collet Removing Pliers.
Price, ea., $0 50 N. P....$0 70



Optician's Steel Pliers.
Best American Make.
No.2641. Price, each.....$0 60
No.2642. Nickel-plated,ea., 75
The inside of one jaw is concave and the other convex. A handy tool for shaping eyeglass springs, temple bows, flat and round wire, etc.



No. 4514. Optician's Pliers.
Spectacle and Eyeglass Shaper.
Price, 4½-inch, $0 60; 5½-inch..$0 75

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TOOLS P.

NO. 2728. HOLLOW PIN VISE.
Ebony Handle.....each, $0 30

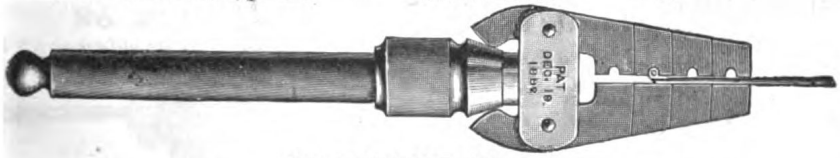
Full Size.
PATENT PIN VISE.
No. 2729. Patent Pin Vise, Nickel-plated.....each, $0 75
" 2730. " " " " large, holds from No. 46 to finest wire.....each, 90

NO. 2731. HOLLOW PIN SLIDE.
3½ inch, $0 15 4½ inch, $0 20 5½ inch, $0 25
Nickel-plated, ...extra, $0 10

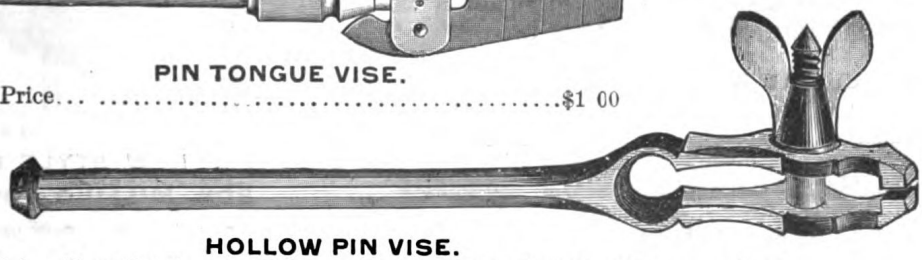
NO. 2732. HOLLOW PIN VISE.
Ebony Handle.....each, $0 65

NO. 2733. HOLLOW ENGLISH PIN VISE.
Price.....$0 60 Nickel-plated.....$0 80

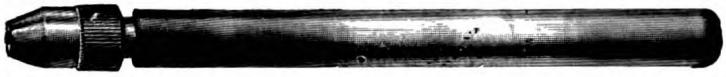
PATENT PIN VISE.
No. 2734. Small, 3½ inch, nickel-plated.....each, $0 80
" 2735. Medium, 4¾ inch " ..... " 1 00



PIN TONGUE VISE.
No. 2740. Price.....$1 00



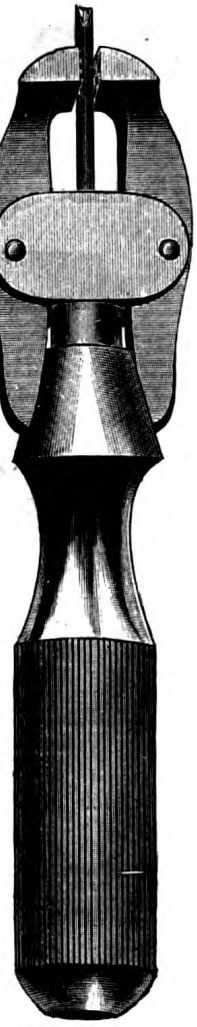
HOLLOW PIN VISE.
No. 2736. Price, Best Quality....$0 40 Nickel-plated, Best Quality..... $0 60



NO. 2737. NEW PIN VISE.
With movable chuck jaws, finely finished, handles come in Rubber or Celluoid.
Price.....each, $0 75

NO. 2738.
SOLID PIN VISE.
Price.....$0 45
Nickel-plated.... 60

NO. 2739.
NUT AND SCREW FOR PIN VISES.
Price.....10c.
Nickel-plated.....20c.



NO. 2741. LARGE PIN VISE.
5 inch.....each, $1 20

NO. 2742. GEM PIN VISE.
No. 2742. Small..$0 20
" 2742½. Large. 25

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TOOLS P.

NO. 4516. DOUBLE END PIN VISE.
With adjustable Jaw on each end. Nickel-plated.
Price, each.....$0 45

NO. 4517. PIN VISE AND BROACH HANDLE.
Light fluted brass handle, steel chuck head with brass chucks of various borings. Nicely arranged in a box. A good true tool.
Price, each..... $0 50

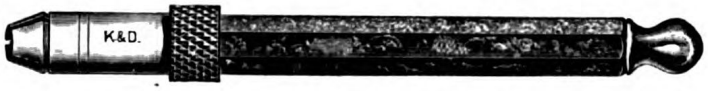
NO. 4518. BLACK-HANDLED PIN VISE.
Holds from No. 52 to finest.
Price, each $0 50

NO. 4519. SLIDING PIN VISE WITH CHUCK.
Price, each, nickel-plated.....$0 50

NO. 4520. HOLLOW EBONIZED HANDLE PIN VISE.
Holds No. 60 to finest.
Price.....$0 35

NO. 4526. PIN VISE, WOOD HANDLE.
Price, each.....$0 50

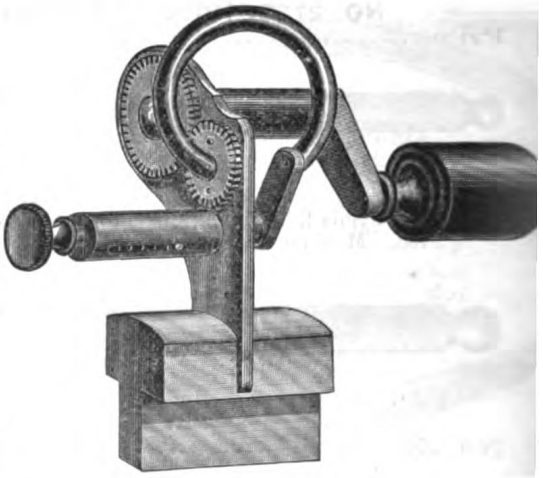
NO 4522. NICKEL-PLATED PIN VISE.
Price, each.....$0 65



NO. 4523. CELLULOID HANDLE PIN VISE.
Price, each.....$0 65

NO. 4524. K. & D. PIN VISE.
This Pin Vise is superior to all others for quick work; press on head, open jaws, insert wire and tighten with knurled head. Price, each.....$0 50

NO. 4525. ROSEWOOD HANDLE PIN VISE.
Holds from 50A to finest stub wire. Price, each.....$0 90



NO. 2750. NEW STYLE PENDANT BOW MILLING TOOL.

The above cut shows a very useful tool for milling Pivots on Pendant Bows. Take screw-driver, turn screw in small wheel so that you can put in cutter, reverse the screw so that cutter cannot fall out; pull the knob to left outward, insert the Pendant Bow, as shown in cut, then fasten in vise, press knob while turning the crank until the desired thickness is obtained.

Price, each.....$1 75

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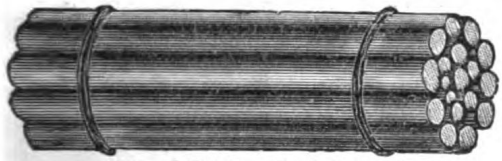
TOOLS P.

No. 4528. Pitkin's Antibreak Pegwood.

Price per box, as shown above, containing 72 sticks.....$0 25

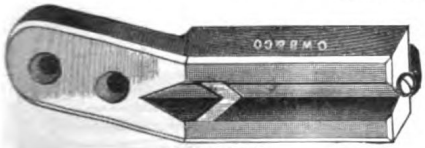


No. 2744. Pithwood.

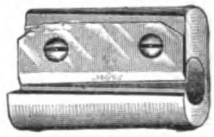
Each, per Bundle.....$0 05
Doz. Bundles 50

Pegwood.

No. 2745.	Each Bundle	$0 05
	Per doz. Bundles	40
" 2745½	Best Pegwood, each Bundle	05
	" " per doz.	50
" 4526.	Clock Pegwood, per Bundle	10
	" " " doz. Bundles	75



No. 2743.
Pegwood Sharpener.
Each.....$0 25



No. 4527.
Pegwood Cutters.
Price.....each, $0 10

The Lightning Pivoter.

The above cut represents Beache's Lightning Pivoter. It consists of a set of tools for cutting the various pivots of a watch, both conical and square shouldered.

They are made to fit any American lathe having a tail-stock.

We guarantee them to cut any pivot that can be cut with the graver, and in less than one-tenth the time, making pivoting an easy process.

The fourth wheel (or second-hand pivot) can be cut to any length desired.

Centering and drilling tools are included in the set; these need only a trial to be fully appreciated by any watchmaker.

No. 2747. Manufactured in two sets, one consisting of nine tools, at. $5 50

No. 2748. Another, consisting of ten tools, complete, with cherry case and glass cover, at..... 6 50

No. 2727. Rubber-Handled Pin Vise or Broach Handle.

With movable chuck jaws, well tempered.....each, $0 50

(Cut full size.)

No. 2724. Steel Ribbed Hollow Pin Vise.

With 4 Drills in the hollow of Handle, by pulling out Knob at end to the right.

Price.....each, $0 25 Extra quality finish .....each, $0 35

No. 2726. Pin Vise.

A handy device for holding wire, etc. The body is hollow and the chuck will take wire to 60 gauge. Price.....each, $0 40

No. 2746. Lever Fork Polisher.

Price.....$0 25

No. 2723.
Birch's Pin Vise.

Jaws made of Stubs' steel, hardened and tempered. Will hold wire from No. 60 Stubs' wire gauge to the finest.
Price, nickel-plated, ea., $0 50

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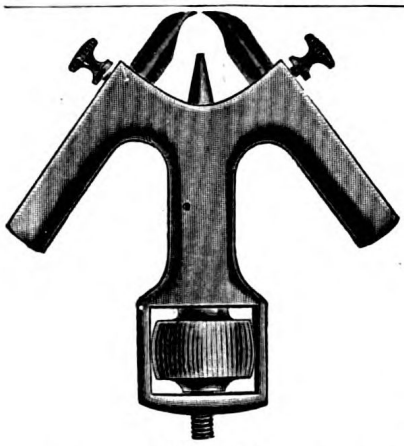
TOOLS R.

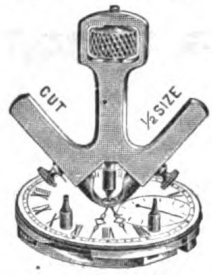


NO. 2758.

The Hardinge Roller Remover.

Price.....$2 00

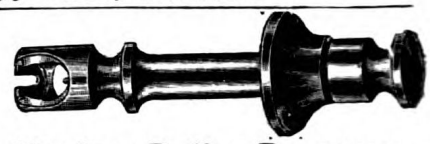
NOTICE—Prices on above Roller Removers have advanced from $1.50 to $2.00 since May, 1896.



NO. 4529.

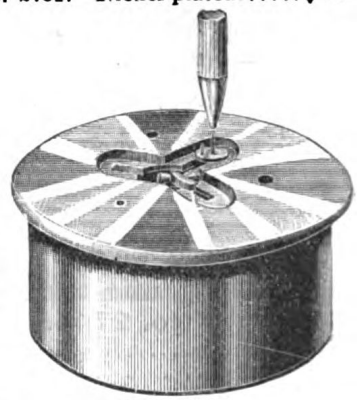
Hardinge Patent Improved Roller and Hand Romover.

As a Hand Remover it is supplied with three caps which fit on taper point of Punch as shown on cut and serve as Punches. These are hardened and properly fitted, and will be fitted to any of the old Roller Removers for 75 cents. This includes grinding and raising Punch—three finished caps and adjusting if necessary. Price, without Hand Removing attachment, $2.00; with attachment, $2.50.



Yankee Roller Remover.

No. 2751. Nickel-plated.....$1 25



NO. 4530.

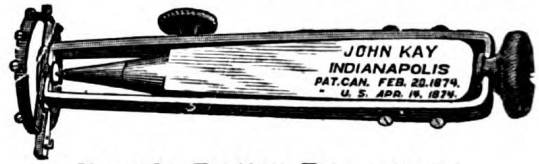
Roller Remover.

Price, nickel-plated.....$0 50

No. 4082.

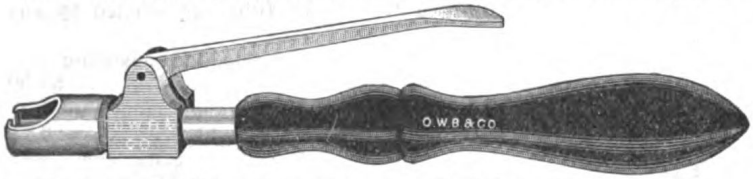
Johanson's New Style Roller Remover.

Price.....$3 00



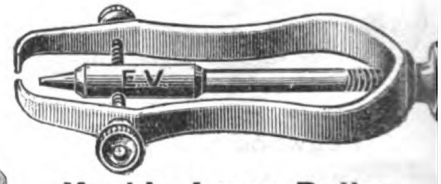
Kaye's Roller Removers.

No. 2757. Nickel-plated.....$0 75



Lever Roller Remover. Rubber Handles.

No. 4533. Price.....$1 00



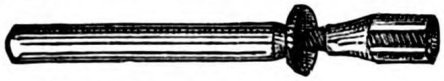
Vock's Lever Roller Remover.

Steel Tempered. Adjustable.

No. 4534. Price.....$0 65

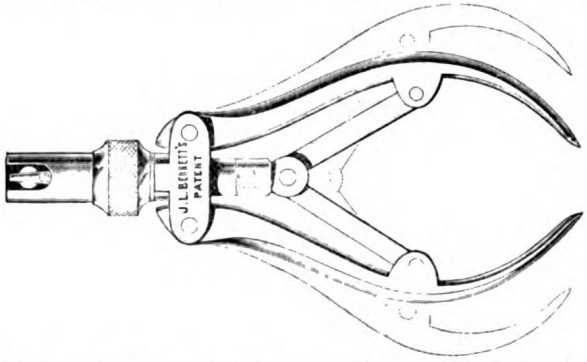
New Style Improved Roller Remover.

No. 4532. Price.....$1 00



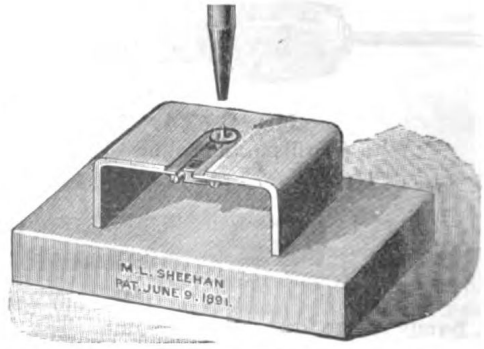
Swiss Roller Remover.

No. 2752. Price.....$0 35 Nickel-plated.....$0 60



No. 4082½. The Best Roller Remover.

Price.....$3 00



No. 2755. Sheehan's Watch Roller Remover.

Will fit any watch, remove and replace the roller without disturbing the hairspring; requires no adjusting; not liable to get out of order.

Price.....$1 00

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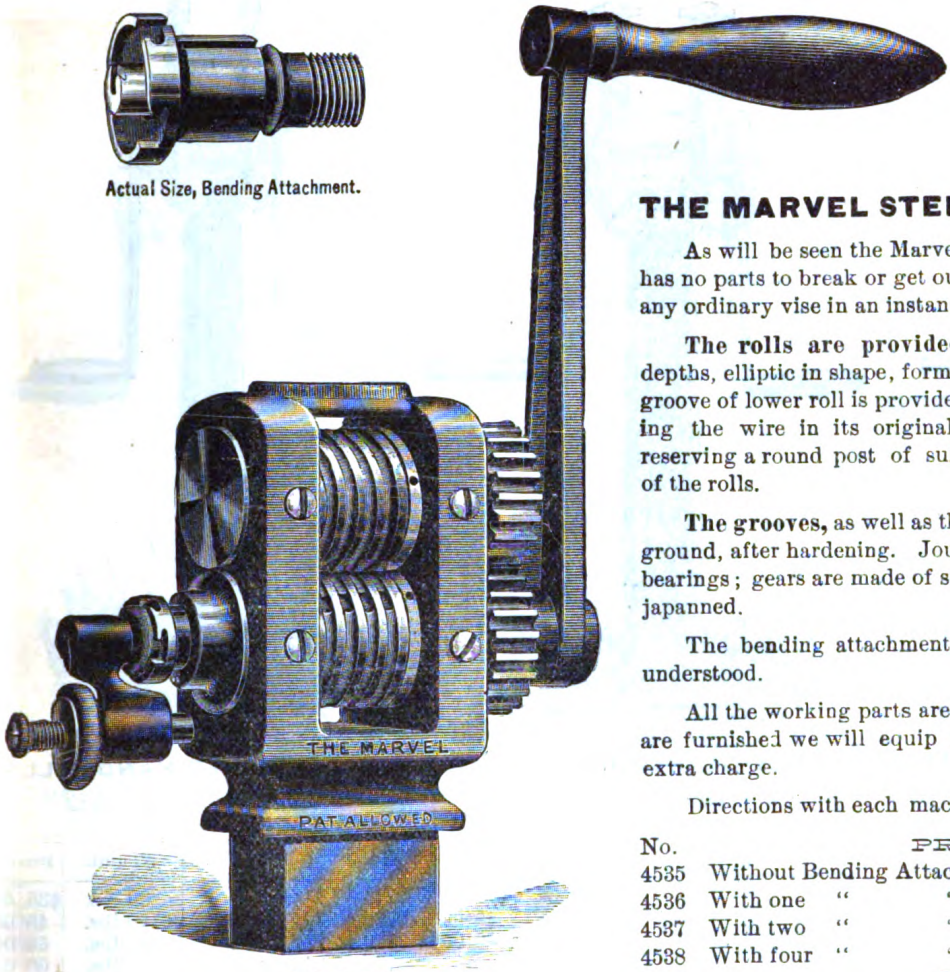
TOOLS R.

Actual Size, Bending Attachment.



2-3 SIZE.

THE MARVEL STEEL SPIRAL MACHINE.

As will be seen the Marvel is a very compact machine. It has no parts to break or get out of order. Can be fastened to any ordinary vise in an instant.

The rolls are provided with four grooves of different depths, elliptic in shape, forming a very pretty flat wire. Each groove of lower roll is provided with a tapering recess, maintaining the wire in its original shape as it passes over recess, reserving a round post of sufficient length at each revolution of the rolls.

The grooves, as well as the rolls and journals, are accurately ground, after hardening. Journals are provided with gun-metal bearings; gears are made of steel; housing and crank are neatly japanned.

The bending attachment is very simple and will be readily understood.

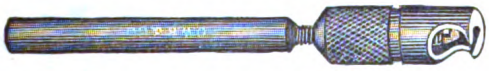
All the working parts are of hardened steel. When samples are furnished we will equip machine to suit samples without extra charge.

Directions with each machine.

No.	PRICES.	
4535	Without Bending Attachments	$14 00
4536	With one " "	18 00
4537	With two " "	20 00
4538	With four " "	22 00

NO. 2753. ROLLER REMOVER.

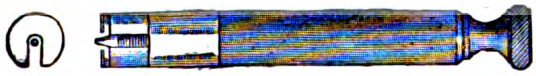
Nickel-plated.....$0 85

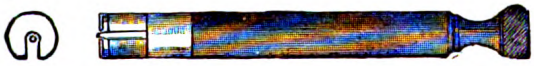


BULLOCK'S SCREW ROLLER REMOVER.

Very fine and accurate

No. 2754 Nickel-plated.....$0 75





ROLLER REMOVERS.

No. 4540 Polished steel, Brass screw top .....each, $0 75
No. 4541 Fluted " Rubber screw top..... " 50

For other Roller Removers see Page 192.

NO. 4539.

ROCHELEAU JEWELERS' RING ROLLS FOR STRETCHING RINGS.

Consisting of 2 Flat Roolls, 2 Half Round and Oval, 1 Eccentric Roll. Length of Rolls, 2 inches. The lower roll should always be a flat one. The eccentric roll must not be used except on tapering shank rings. If used on flat rings it will twist them out of shape. The eccentric roll is distinguished from the others by a file mark across the end of roll.

Price, as shown above.....$5 00

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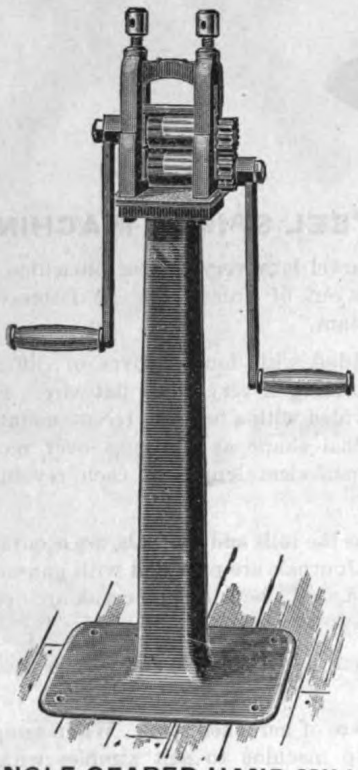
TOOLS R.

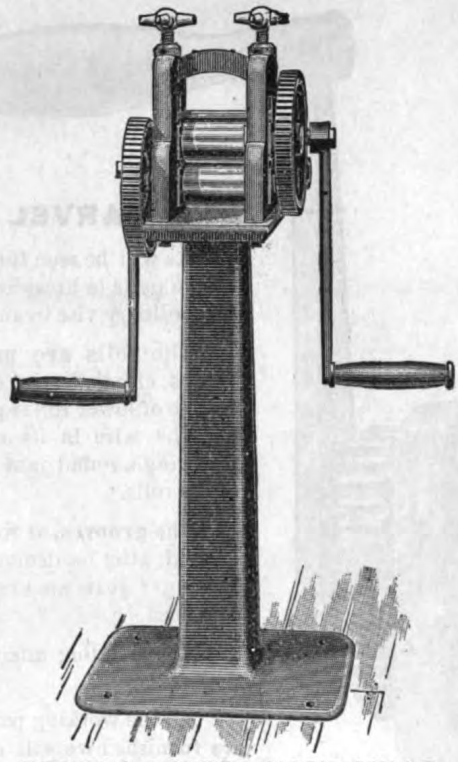


SINGLE-GEARED HAND MILLS.

WITH FLAT ROLLS.

No.	Size—In. dia. by in. long.	Weight.	Price.
2766	1½ x 2	80 lbs.	$30 00
2767	1⅞ x 2½	100 lbs.	40 00
2768	2¼ x 3	145 lbs.	50 00
2769	2½ x 3½	165 lbs.	60 00
2770	2¾ x 4	190 lbs.	75 00

The rolls are evenly tempered, truly ground, finished with a high polish, and are fully warranted. The gears are all cut, cranks of steel, boxes of bronze, and the pressure screws of steel, with the points tempered.

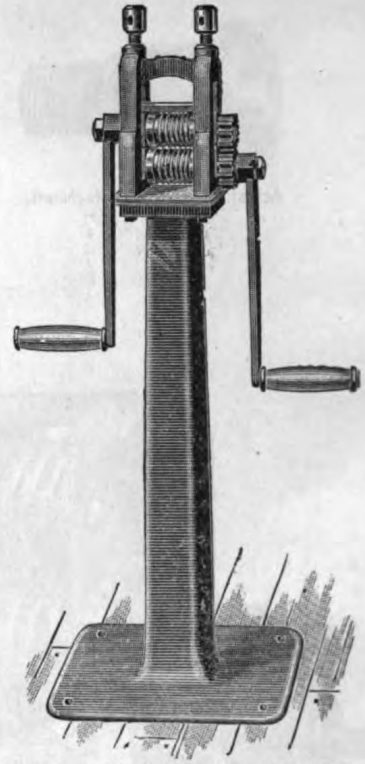


DOUBLE-GEARED HAND MILLS.

WITH FLAT ROLLS.

No.	Size—In. dia. by in. long.	Weight.	Price.
2771	2¼ x 3	180 lbs.	$75 00
2772	2½ x 3½	200 lbs.	85 00
2773	2¾ x 4	225 lbs.	100 00

The desirable feature of the Single and Double-geared Hand Mills is in the changing of the rolls; the frame does not have to be taken apart, but by simply loosening up the pressure screws, and drawing out the lower roll, it is ready for another style of roll.

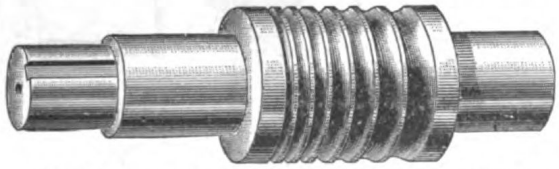


SINGLE-GEARED HAND MILLS.

WITH SQUARE WIRE ROLLS.

No.	Size—In. dia. by in. long.	Weight.	Price.
2774	1½ x 2	80 lbs.	$35 00
2775	1⅞ x 2½	100 lbs.	45 00
2776	2¼ x 3	145 lbs.	56 00
2777	2½ x 3½	165 lbs.	68 00
2778	2¾ x 4	190 lbs.	85 00

All the desirable features in our other Hand Mills are found in both these styles.

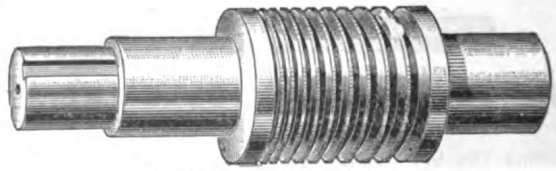


SINGLE HALF-ROUND RING ROLLS.

TO FIT EITHER SINGLE OR DOUBLE-GEARED HAND MILLS.

No. 2779.	Size 1½	in. dia. by	2	in. long,	each	.....	$10 00
" 2780.	" 1⅞	"	2½	"	"	.....	12 00
" 2781.	" 2¼	"	3	"	"	.....	15 00
" 2782.	" 2½	"	3½	"	"	.....	20 00
" 2783.	" 2¾	"	4	"	"	.....	25 00

If to fit in any mill, of other make than ours, send exact dimensions of the body, journals and gear or crank.



SQUARE WIRE ROLLS.

TO FIT EITHER SINGLE OR DOUBLE GEARED HAND MILLS.

No. 2784.	Size 1½	in. dia. by	2	in. long,	per pair	..	$20 00
" 2785.	" 1⅞	"	2½	"	"	..	24 00
" 2786	" 2¼	"	3	"	"	..	30 00
" 2787.	" 2½	"	3½	"	"	..	40 00
" 2788.	" 2¾	"	4	"	"	..	50 00

To produce perfect wire, we would require the mill that the rolls are to be fitted to, so that we may closely fit them between the boxes

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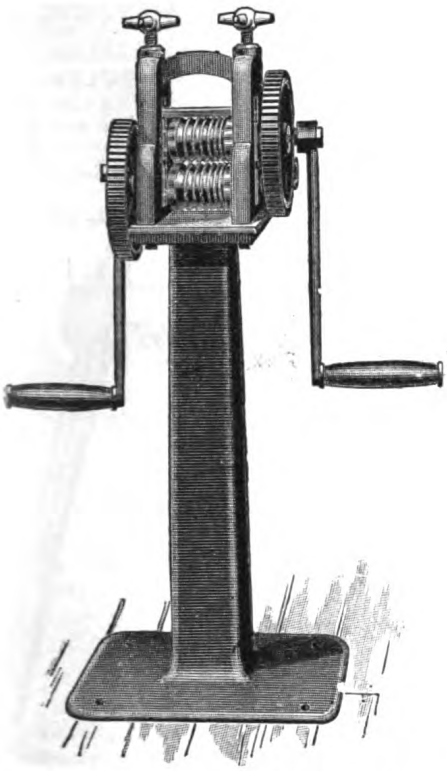
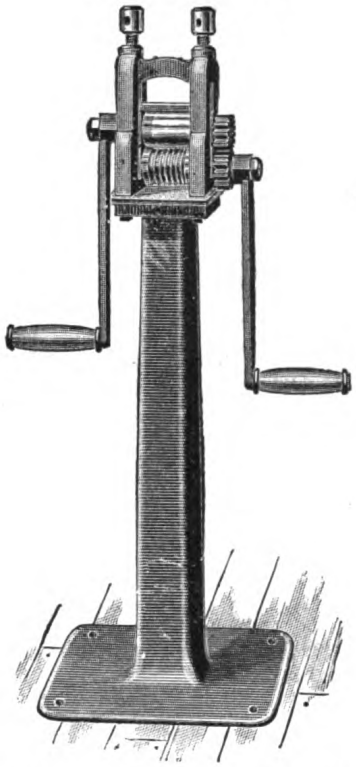
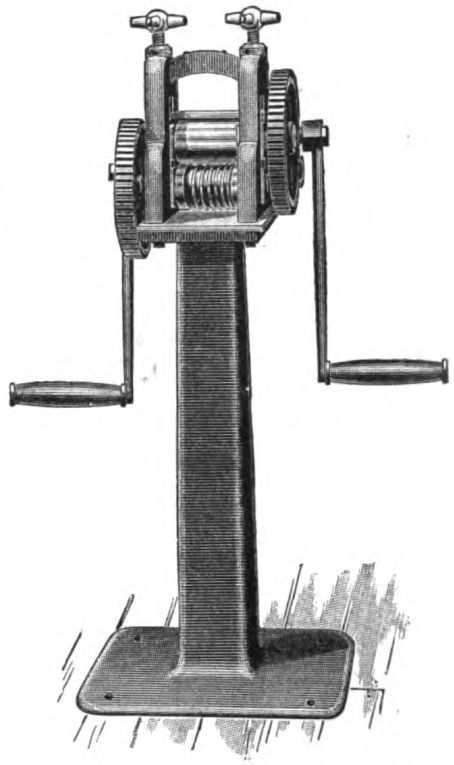
TOOLS R.







DOUBLE-GEARED HAND MILLS.

WITH SQUARE WIRE ROLLS.

No.	Size—In. dia. by in. long.	Weight.	Price.
2789	2¼ x 3	180 lbs.	$81 00
2790	2½ x 3½	200 lbs.	93 00
2791	2¾ x 4	225 lbs.	110 00

Great care is taken in the graduating, and turning in the grooves, to secure accuracy of the wire, making them more perfect than those generally produced.

We cut as large grooves as the size of the rolls will permit, running them down to as small as is practicable to roll.

SINGLE-GEARED HAND MILLS.

WITH 1 FLAT AND 1 RING ROLL.

No.	Size—In. dia. by in. long.	Weight.	Price.
2792	1½ x 2	80 lbs.	$32 50
2793	1⅞ x 2¼	100 lbs.	42 50
2794	2¼ x 3	145 lbs.	53 00
2795	2½ x 3½	165 lbs.	64 00
2796	2¾ x 4	190 lbs.	80 00

This style of mills—indispensable in every jewelry factory — has the same general construction as our other hand mills.

DOUBLE-GEARED HAND MILLS.

WITH 1 FLAT AND 1 RING ROLL.

No.	Size—In. dia. by in. long.	Weight.	Price.
2797	2¼ x 3	180 lbs.	$78 00
2798	2½ x 3½	200 lbs.	89 00
2799	2¾ x 4	225 lbs.	105 00

In our ring rolls, we take special care in the shape of grooves, making them — where no instructions are given — medium weight rings, the style most in use.

No. 2799½.

No. 2800.

No. 2801.

No. 2802.

No. 2803.

Standard sizes of grooves in square wire rolls.

No. 2804.

No. 2805.

No. 2806

No. 2807.

No. 2808.

Standard shapes and sizes of grooves in ring rolls.

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TOOLS R.

No. 2817.

"STANDARD TOOL CO." STEEL RULES.

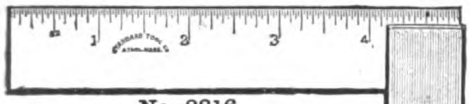
Graduated on one side in eighths and thirty-seconds, and on the other in sixteenths and sixty-fourths.

1-inch.	Price..... Each,	$0 20
2 "	" ..... "	25
3 "	" ..... "	35
4 "	" ..... "	50
6 "	" ..... "	65
9 "	" ..... "	80
12 "	" ..... "	1 00

No. 2818. FLEXIBLE STEEL RULES.

These are very thin, watch-spring tempered scales, nicely graduated on one side only; divided into 32ds and 64ths, whole lenghth; ½-in. wide, and will easily conform to a two-inch circle. These rules are highly prized by all fine mechanics, for measuring irregular surfaces.

Prices, each, 3-in. long, 45c.; 4-in. long, 60c.; 6-in. long, 80c.



No. 2816.

Graduated Steel Square.

PRICE.

2¼ in.	$1 00	4 in.	$1 50
3 "	1 25	5 "	2 00

No. 2813.

Patent Ring Holder.

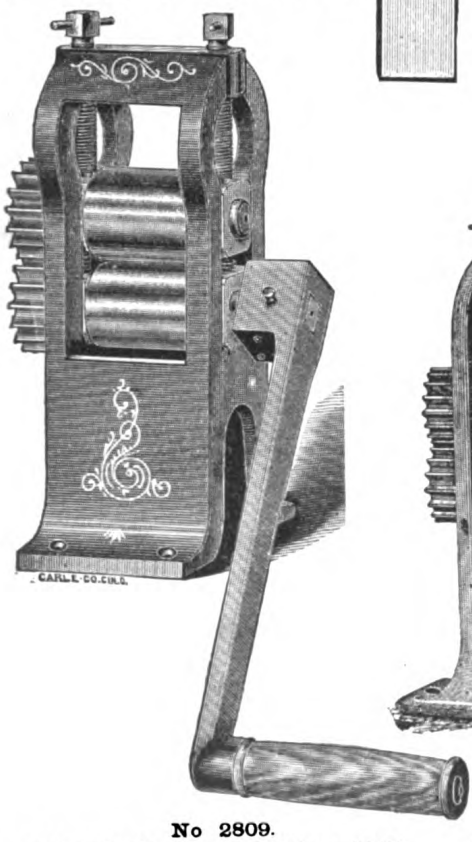
Nickel-plated.....$0 75

No. 2811.

"Little Giant" Ring Bender.

Patented September 5, 1882.

Price..... $12 00



No 2809.

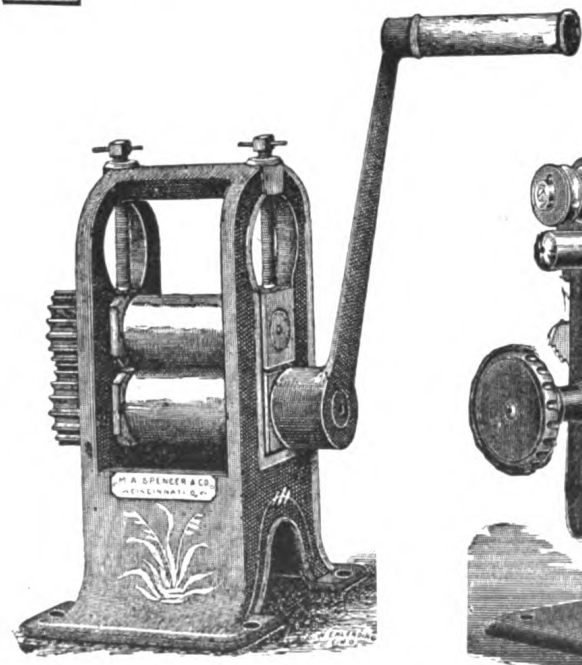
Crocker's New Rolling Mill.

The Rolls are 2-inch diameter by 2¾ inches wide, and ground perfectly smooth; cogs are made of bronze metal; every mill warranted.

Price..... $20 00

No. 2809½. Rolling Mill with 1 flat and 1 ring roll, as cut below. Price, $27 00

Ring Roll, $10.00—Fits Mill No. 2809.



Spencer & Co.'s Cold Rollers.

These rolls are superior to any now in the market. The body is heavy cast-iron, finely jappanned and decorated in gold.

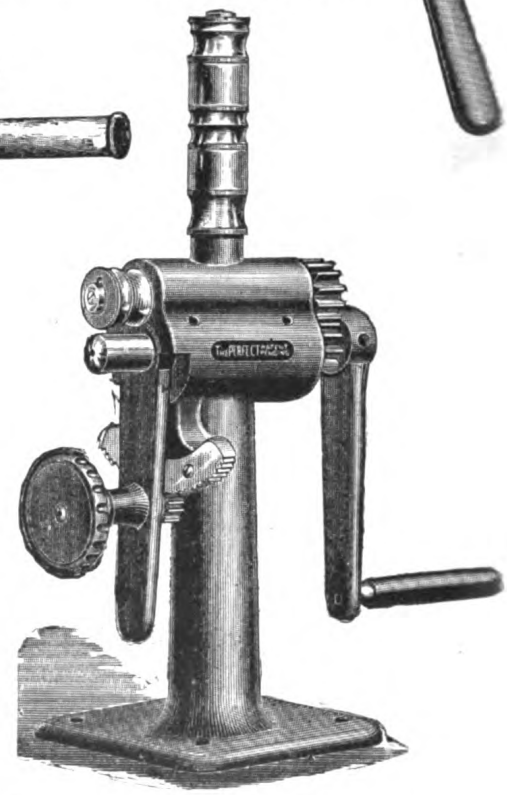
The rolls, cogs and gearing screws are of hardened tool-steel.

The rolls are 2½ inches wide.

Each roll is fully warranted for 1 year, and any parts broken in fair usage will be replaced. Suitable for Jewelers and Dentists.

No. 4542. Price of Rolls....$15 00

No. 4543. " Ring Roll to fit above Rolling Mill, extra..... 10 00



No. 2812.

The "Perfect" Ring Stretcher.

The machine is furnished with six hardened and polished collars—four grooved and one each flat and eccentric. These, when not in use, are placed on an upright rod, and are quickly interchanged to the spindle, without the removal of any pins or screws. The pressure is obtained with the eccentric lever, regulated by the hand wheel.

Price.....$12 00

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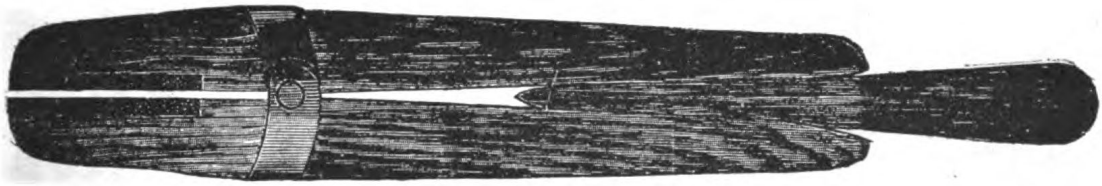
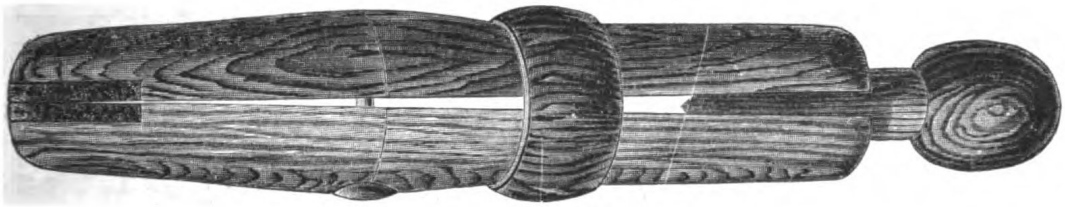
TOOLS R.



NO. 2761. Cut ¾ Size.



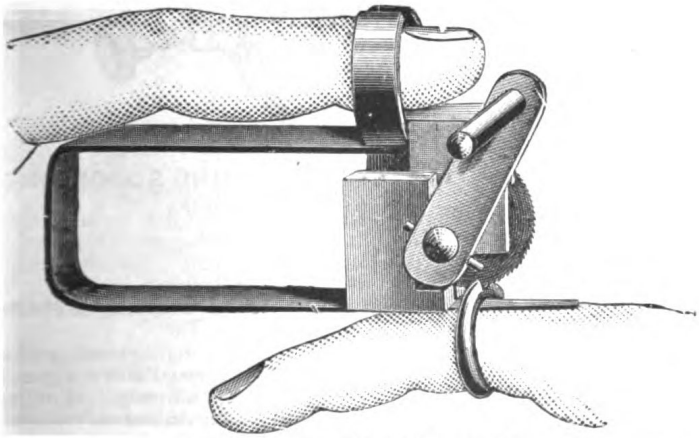
Cut ¾ Size.

NO. 2762. RING CLAMPS.

No. 2760.	Boxwood with screw on top	each, $0 35
" 2761.	" lined with Walrus, Brass Band, Flat Wedge, large	" 40
" 2762.	" " " " Bone Slide, Round " "	" 45

NO. 2763. RING JOINTER.

Price.....$0 70



NO. 2764. RING SEPARATOR.

By inserting the Point under the Ring as shown in cut you can saw any Ring without danger and pain to the finger. Every Jeweler should have one.

Price.....each, $0 75
Nickel-plated..... " 1 00

NO. 2765.

NO. 2765.

THE ACKERMAN RING CLAMP, FOR HARD SOLDERING AND SIZING RINGS.

This cut represents an entirely new and useful tool for clamping and holding rings while being hard soldered and sized, thus avoiding the use of binding wire. Directions with each tool.

Price.....each, $0 50

NO. 2759.

NO. 2759.

THE KEYSTONE RING CLAMP.

Simplest, Best, Cheapest. The only ring clamp made that will hold both large and small rings equally well.

Price.....$0 25

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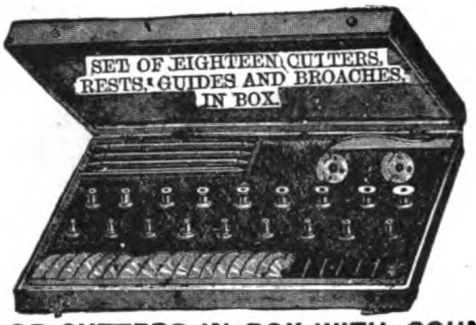
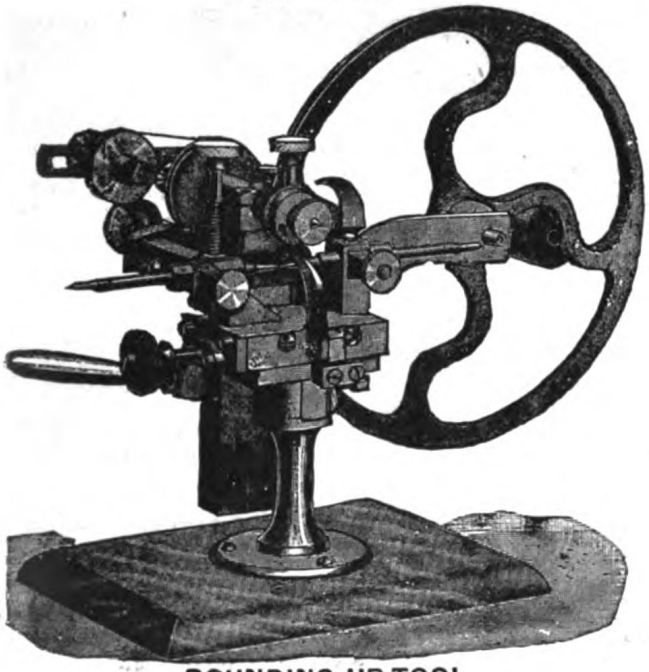
TOOLS R AND S.

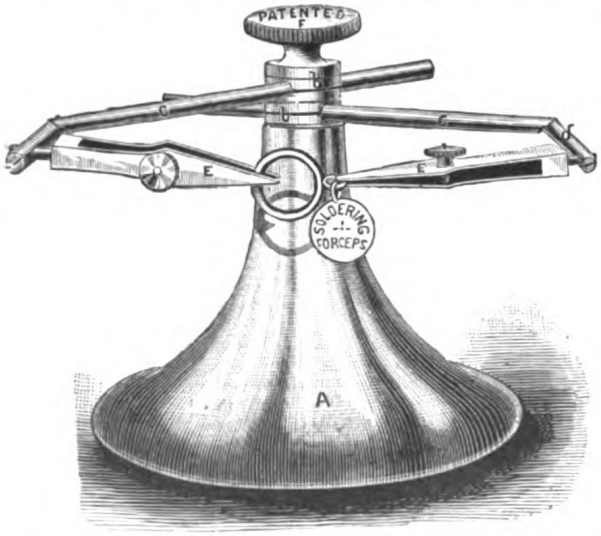


STYLE OF CUTTERS IN BOX WITH ROUNDING UP TOOL.



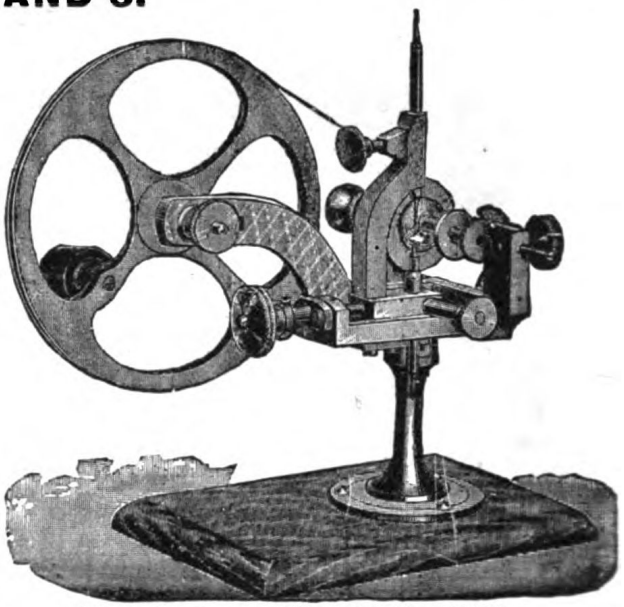
ROUNDING UP TOOL.

No. 2819. Rounding Up Tool, without Cutters, etc... $25 00
" 2820. Same with set of 18 Cutters, 18 Rests, 4 Broaches, 2 Guides and Morocco Box..... 40 00



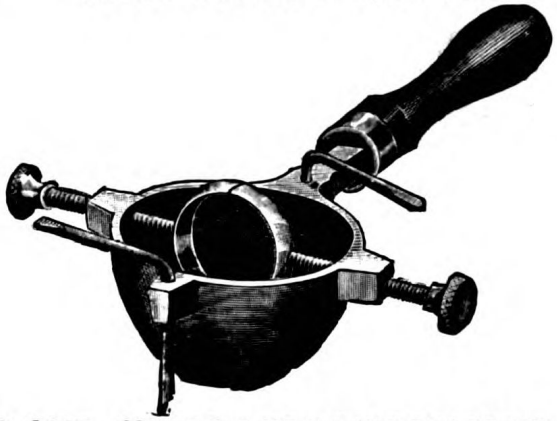
SOLDERING FORCEPS, ADJUSTABLE.

No. 2821. Japanned..... $1 75
" 2822. Nickel-plated..... 2 50



NO. 2823. ROUNDING UP TOOL.

No. 2823. Without Cutters, etc.....each, $ 9 50
" 2824. Same with Set of 12 Cutters, 12 Rests, 4 Broaches, 1 Guide and Morocco Box, each, 20 00
" 2825. Without Cutters, etc..... 20 00
" 2826. Same with Set of of 18 Cutters, 18 Rests, 4 Broaches, 2 Guides and Morocco Box each, 38 00
" 2827. Rounding Up Tool, without Cutters, etc. " 15 00
" 2828. Same with Set of 18 Cutters, 4 Broaches, 2 Guides and Morocco Box.....each, 33 00
" 2823. Rounding Up Tool has only one Guide at quoted price.
" 2827. Rounding Up Tool has no Rests, as it is fitted with the Universal Adjustable Rest.



NO. 2828. MILLER'S NEW RING SOLDERING TOOL.

The tool will clamp a ring so that the joint is held firmly together. No springing together, bending or wiring of the ring is required. The joint cannot open while the ring is being heated. No part of the tool is injured by use. The bowl will reflect the heat so that a quick heat may be obtained without the use of charcoal.

The tool is handy and useful for hard soldering studs, cuff and collar buttons, etc. The wires when pressed down upon the work bind in the holes and hold the work firmly. For such work the bowl may be filled with coal or asbestos.

It is unsurpassed for soldering seal rings without removing stones. The bowl should be filled with *wet* asbestos, sand or paper. The screws draw the heat away and prevent any considerable heat from reaching the stone. With this tool such work may be easily and safely done.

Put up in paper box with *package of asbestos* ready for immediate use, copper plated. Price.....$0 50

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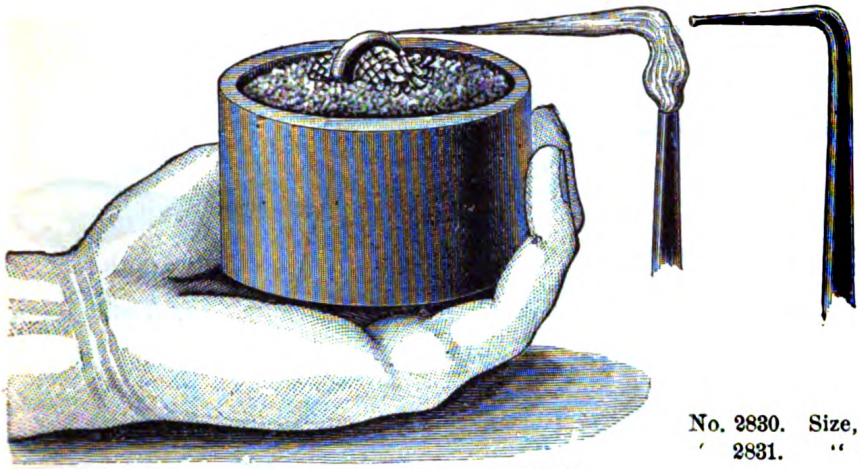
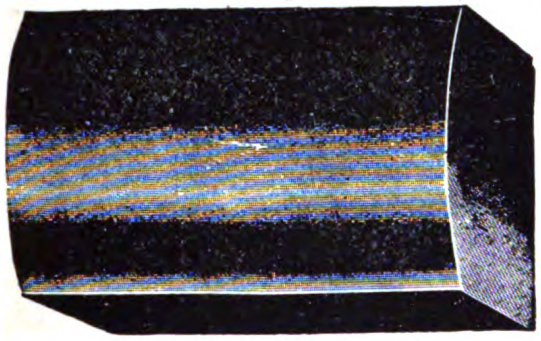
TOOLS S.



NO. 2829. PATENT SOLDERING BOWL.

A hard asbestos Bowl, packed with loose asbestos and accompanied with a plug of braided asbestoes fibre, to place inside of ring; is intended for soldering stone set rings without removing or heating the stone. Directions with each box.

Price.....$0 65



CHARCOAL SOLDERING BLOCKS.

(Chemically prepared.)

Superior to any other soldering block of Asbestos or other materials. Retains the surface and the heat, but not the sparks. Will not burn to ashes like ordinary charcoal. Is very dense and tough, not brittle. Is easily punctured and holds the work firmly.

No. 2835.	Size, 3¼x2¼	each,	$0 15;	per doz.	$1 50
" 2836.	" 4¾x3	"	30;	"	3 00
" 2837.	" 6¾x2½	"	35;	"	3 50
" 2838.	" 7 x4	"	40;	"	4 50

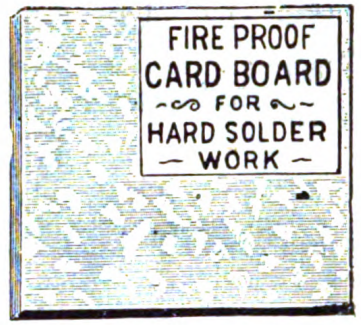
NO. 2839. TILE SOLDERING BLOCK.

(Improved Soldering Block made of Clay.)

The merits of this Block is, that it will admit of pinning work on without crumbling; clean on the bench; will not soil the hands; will hold heat better and last longer than any other Block in the market.

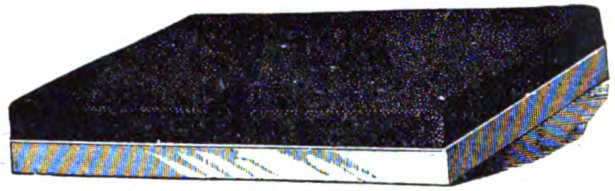
(Size of Block, 4 inches in diameter.)

Price.....each, $0 25



ASBESTOS SOLDER BLOCK.

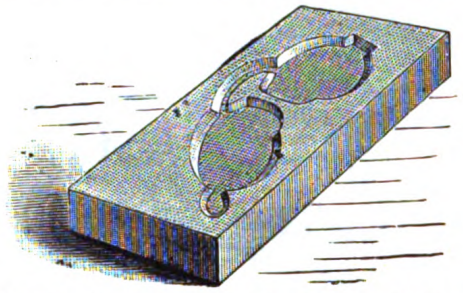
No. 2830.	Size, 4x4, heavy	each,	$0 10;	per doz.	$0 75
" 2831.	" 6x2x½ in. thick	"	25;	"	2 75



NO. 2832. SOLDERING BLOCK.

(Prepared Charcoal, bound with Tin.)

Price.....each, $0 15



NO. 2833. PATENT SPECTACLE AND EYE-GLASS SOLDERING BLOCK.

It contains an impression on one side for eye-glass (as shown in cut), and the other for spectacles. Each block has a supply of asbestos fibre. Full directions with each box.

Price.....each, $0 75

NO. 2834.

Grooved Soldering Blocks, for soldering wire, Pin, Tongs, etc., block 6x2. Price.....each, $0 45

NO. 2840. ASBESTOS INGOT AND SOLDERING TABLET.

Price.....each, $0 35

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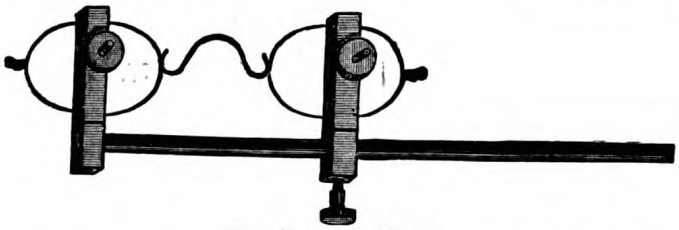
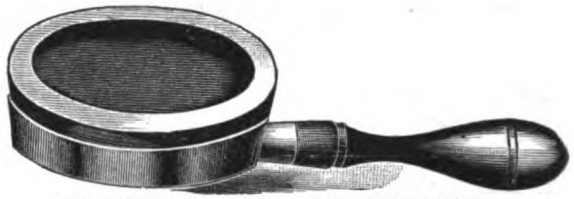
TOOLS S.



Cut is one-half size.

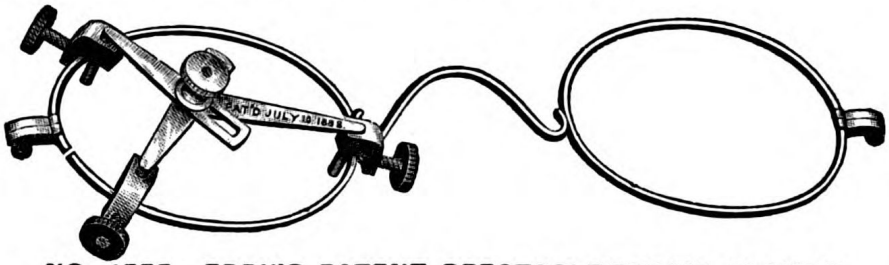
NO. 4554. NEW STYLE SPECTACLE, EYE-GLASS AND JEWELRY CLAMP FOR SOLDERING.

Price.....$1 10



CARBON BLOCK AND HOLDER.

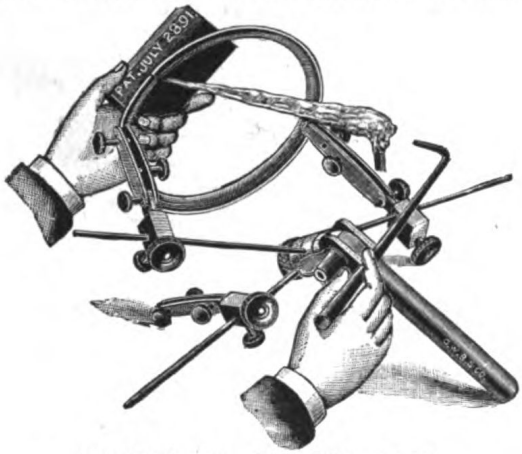
No. 4547. Carbon Soldering Block.....$0 25
No. 4548. " " " and Holder.. 50



NO. 4555. EDDY'S PATENT SPECTACLE REPAIR CLAMPS.

A useful article for holding spectacles or eye-glass frames in position to solder

Price.....$0 75

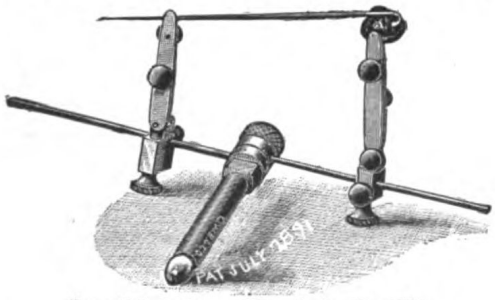


One-third size. Pat. July 28, 1891

NO. 4549. BULLOCK'S PATENT ADJUSTABLE REPAIR CLAMP.

Taken out of base on bench. Can use both hands, and Clamp can be adjusted to any work.

Price per set.....$0 75

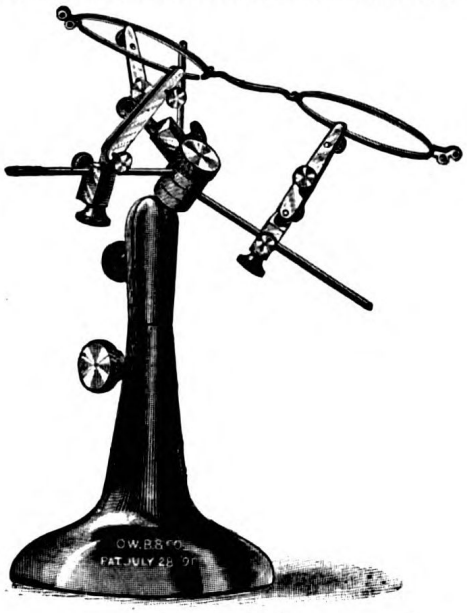


One-third size. Pat. July 28, 1891.

NO. 4550. BULLOCK'S PATENT ADJUSTABLE REPAIR CLAMP.

Taken out of base, with two Arms and two Swing Clamps.

Price .....each, $0 50



One-third size.

BULLOCK'S PAT. ADJUSTABLE REPAIR CLAMP.

With Ball Joint and Base. Holds work of all shapes and sizes. Can turn work in any direction, and use two or more arms. Each works independent of the other. The cheapest and handiest Clamp made. Arms can be taken out of base and used as below, separately. Every Clamp has a swing joint, and is adjustable. This Clamp is fully protected by patents, and is by far the cheapest and best.

Prices, with Base, 3 Arms and 3 Clamps:

No. 4551. Japan.....each, $1 50
No. 4552. Nickel..... " 2 00
No. 4553. For extra Arm and Clamp..... " 40

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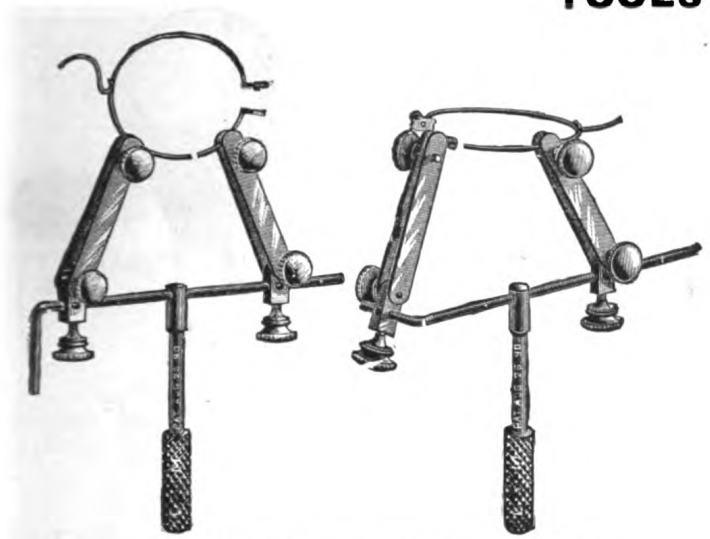
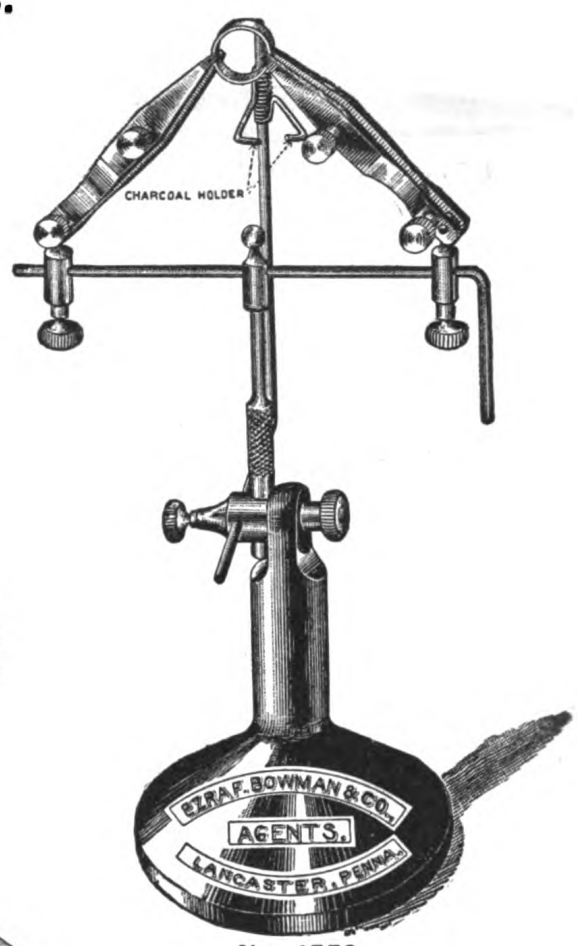
TOOLS S.



NO. 4556. MAGIC REPAIR CLAMP.

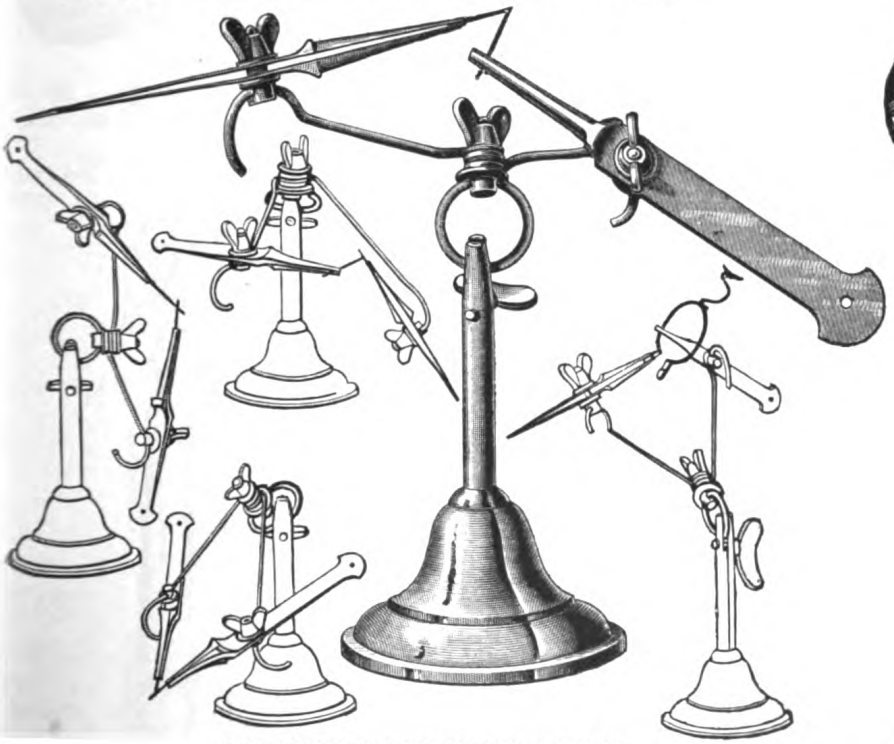
Its usefulness applies alike to Watchmakers, Jewelers, Opiticans, and any one whose work requires several parts to be held firmly in position, at the same time leaving the operator free to use charcoal or asbestos block in one hand and blow pipe in the other. Interchangeable in all its parts, made of steel, finely finished.

Price, nickel-plated.... ....$1 25



NO. 4559.
IMPROVED MAGIC REPAIR CLAMPS.

Price..... .....$2 50



THE VICTOR REPAIR FORCEPS.

The few illustrations shown above give only a faint idea of the unlimited amount of positions into which the two forceps can be brought. It is actually surprising how easily and quickly the most difficult work can be brought together to be soldered. The tedious and often unsatisfactory method of wiring work to charcoal is entirely overcome. It is especially desirable when doing delicate work, where pinning the object is impossible. It is utterly impossible to conceive any position or angle to which the clamps cannot be placed as they follow each and any motion of your hands.

No. 4557. Japanned Base, each.....$1 25
No. 4558. Nickel-plated, each..... 1 75

NO. 4560.
THE GOOD ENOUGH SPECTACLE CLAMP.

It adjusts itself to all sizes and shapes of frames, will not get out of repair by becoming hot.

Price $0 75

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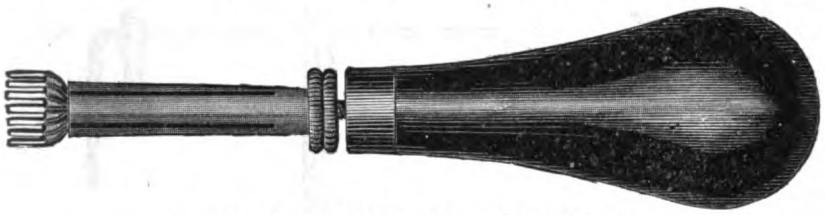
TOOLS S.

NO. 2841. SCREW BLUING PLATE.

For Tempering and Bluing Screws. Price.....$0 50

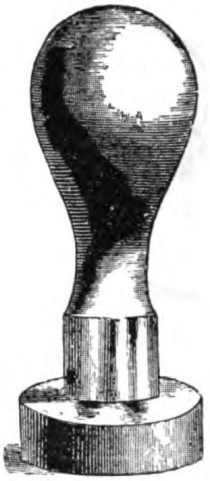


Patented Nov. 27th, 1883. Re-issued June 2d, 1885.

NO. 2842. JOEL'S IMPROVED SETTING HOLDER.

For Diamond Setters and Manufacturers. Is made in three different sizes, and fits any size setting without the use of wax, shellac, etc.

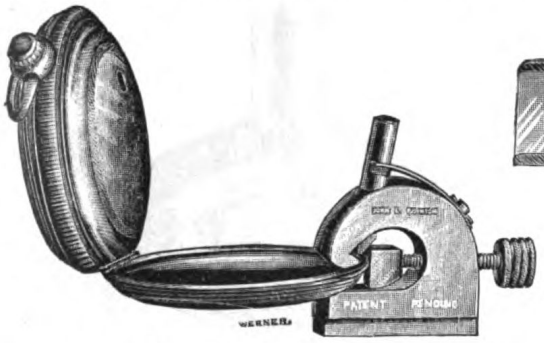
Price, set of three.....$2 25



WAX SEAL.

Solid Brass or Wood Handle with name and address, Oval or round face.

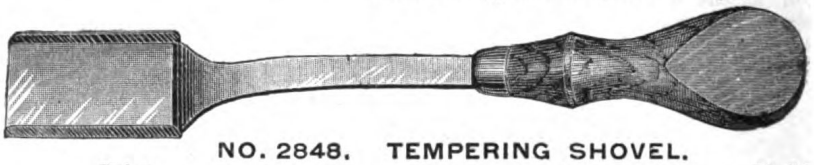
No. 2844. 1 or 1¼ inch face..... $1 50
No. 2845. ¾ or ⅞ " 1 25
No. 2846. ½ inch face, Initial only, 40



NO. 2843. WATCH CASE SWAGE.

A tool that watchmakers have always wanted. It will effectually tighten a loose case. Time required, about two minutes, by a few taps with a small hammer on the top of the punch, as shown in cut.

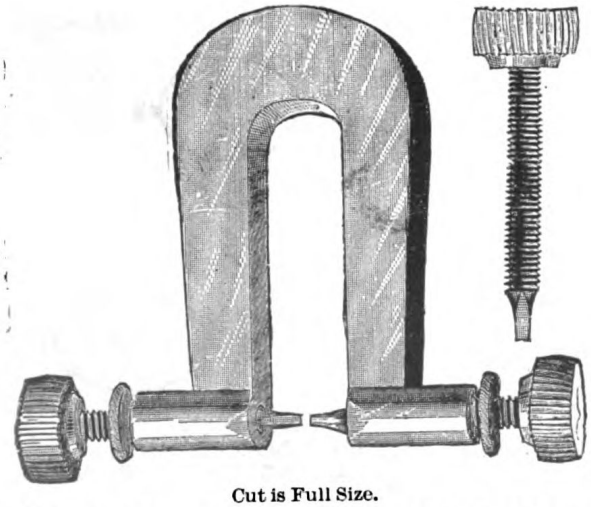
Price..... each, $2 00



NO. 2848. TEMPERING SHOVEL.

Price $0 15

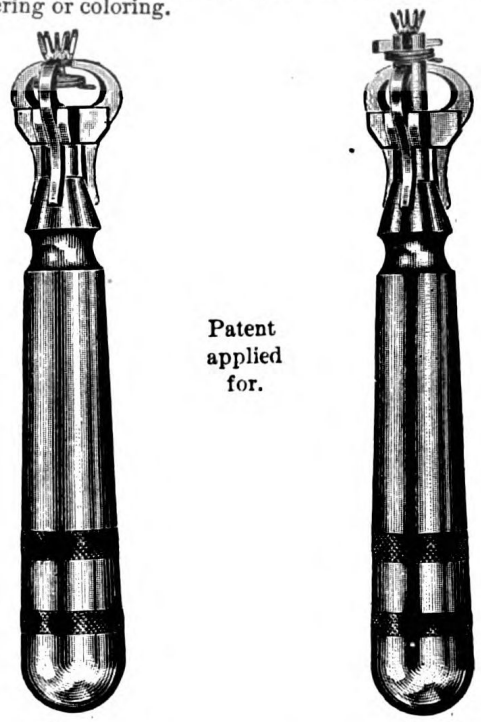
A very Handy tool for holding small articles over the flame while tempering or coloring.



Cut is Full Size.

NO. 2847. SCREW EXTRACTING TOOL.

Price .....$0 70 | Nickel-plated.. ...$0 90



Patent applied for.

Fig. 1. Fig. 2.

NO. 4561. PERFECTION SETTING HOLDER.

Fig. 1 is for holding settings with bezels.
Fig. 2, with attachment, is for holding studs without bezels.

Price, complete..... .. .$2 50

The two cuts show Holder with and without center pin.

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TOOLS S.

SCOTCH STONE SLIPS.

No. 2852. Size ¼-in. Each, $0 10 — No. 2853. ⅜-in. $0 10 — No. 2854. ½-in. $0 10 — No. 2855. ¾-in. $0 12 — No. 2856. ⅞-in. $0 15

LABRADOR OIL STONE.

Is a medium Fine-Gritted, Quick-Cutting Stone, color of coarse emery.

No. 2860. Price, 5½x$\frac{7}{16}$ ..... each, $0 15
No. 2861. " 7½x$\frac{9}{16}$ ..... " 25

No. 4562. WASHITA OIL STONE.

Price, 5-inch.....$0 40 Price, 6-inch.....$0 50

No. 2858. ARKANSAS BEST SQUARE OIL STONE SLIP.

Medium.....$0 25
Large..... 30

No. 2859. OIL STONE POINT.

Arkansas "Best".....each, $0 25

No. 2869. DIAMOND-SHAPED OIL STONE SLIP.

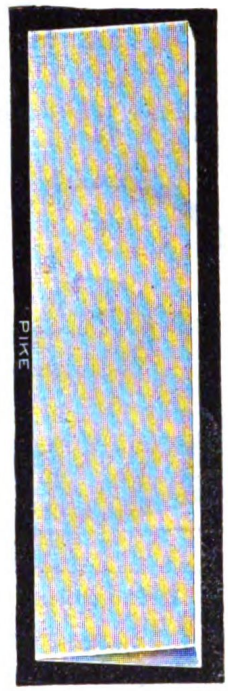
Arkansas "Best".....each, $0 25

No. 2870. ARKANSAS BEST FLAT OIL STONE SLIP.

Price .....each, $0 25

No. 2868. ARKANSAS 3-CORNERED OIL STONE SLIP.

3-cornered Arkansas "Best".....each, $0 35



No. 2857.

KNIFE BLADE OIL STONE.

Arkansas "Best"....each, $0 35

WE HANDLE ONLY THE BEST STONE.

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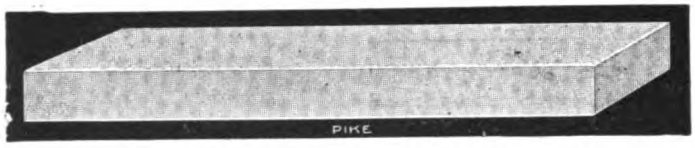


Arkansas Oil Stone Pen Knife Pieces.

No. 4564. Price, 3½x1x⅜-inch thick.....each, $0 50

Jeweler's Bench Stone.

No. 4565. Price, 5x2x⅜ inch..... " 1 00
No. 4566. " 6x2x⅜ " ..... " 1 25

Washita Carver's Hone.

These are turned from the best quality of Washita rock, and make a very handsome substitute for the ordinary steel in the carver's set.

No. 4567a.	Price, 10 inches long, each,	$1 00	No. 4568.	12 in. long, each,	$1 25
No. 4567b.	" 14 " " "	1 35	No. 4569.	16 " "	1 50

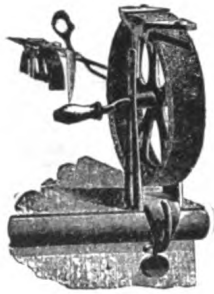
No. 2866.

Grindstone with Frame.

Each.....$3 25

Grindstone.

No. 2862. 5-inch.....each, $0 45
" 2863. 6 " ..... " 50
" 2864. 7 " ..... " 60
" 2865. 8 " ..... " 70

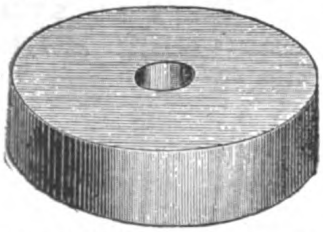


No. 2867.

Diamond Patent Knife and Scissors Sharpener.

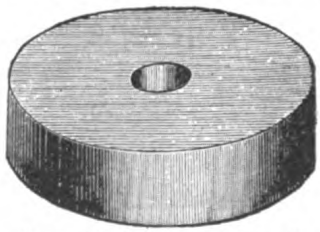
The wheel is made of the best Emory and Corundum, warranted not to crack; is water proof; size of wheel 6-inch diameter.

Price.....$1 25



Soft Arkansas Wheel.

No. 4572. 1½-inch.....$1 75
" 4573. 2 " 2 35
" 4574. 2½ " 3 00



Hard Arkansas Wheel.

No. 4576. 1½-inch.....$2 25
" 4577. 2 " 3 00
" 4578. 2½ " 3 75

Hindostan Stone Wheels.

No. 4579. 2-inch.....$0 60
" 4580. 3 " 90
" 4581. 4 " 1 20
" 4582, 5 " 1 50

No. 4570.

New Improved Family Grindstone.

Price.....$4 00

Iron frame with treadle and belt.

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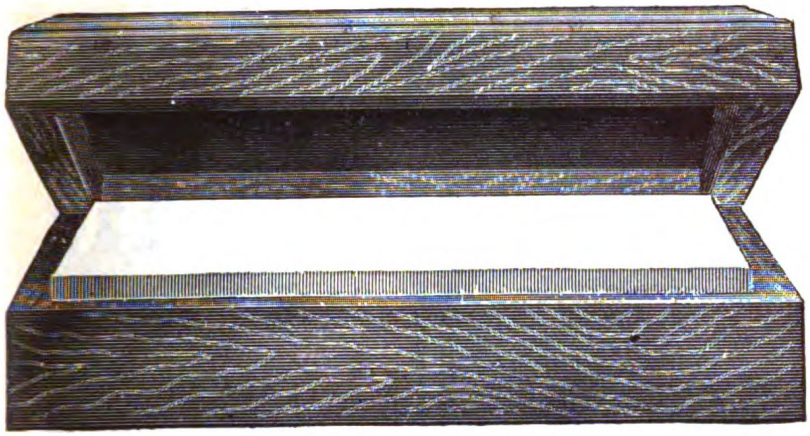
TOOLS S.



BEST ARKANSAS OIL STONE IN BOX.

No. 2871. In box, 3x1 inch.....each, $0 75
" 2872. " 5x2 " ..soft, $1 25;.....hard, " 1 50
" 2873. " 6x2 " ..... " " 1 75
" 2874. " 7x2 " .. .. " " 2 25
" 2875. " 8x2 " ..... " " 2 75
" 2876. " 6x2 " 2d quality..... " " 1 50

WASHITA OIL STONES IN MAHOGANY BOXES.—MOUNTED.

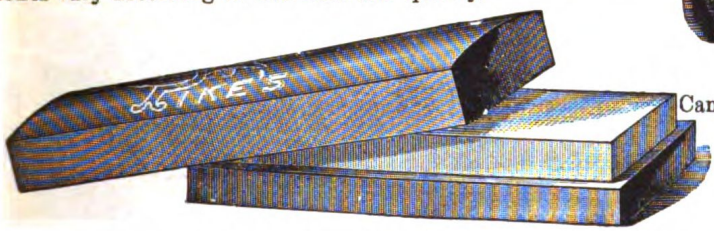
No. 2877. 4x1 in.....each, $0 40 | No. 2879. 6x2 in.....each, $0 60
" 2878. 5x2 in..... " 50 | " 2880. 7x2 in..... " 75

No. 2181. 8x2 in.....$1 00

BEST ARKANSAS UNMOUNTED.

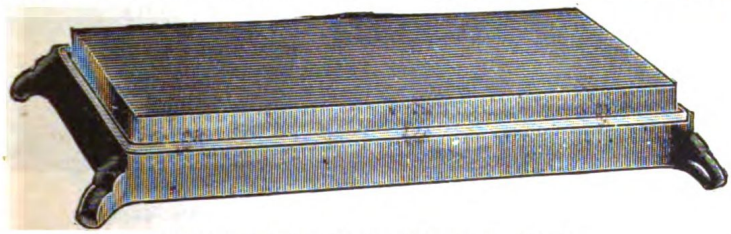
No. 2882. Unmounted 5x2x3/8 in.....each, $0 75
" 2883. " 6x2x3/4 in..... " 1 25
" 2884. " 7x2x3/4 in..... " 1 75

We keep only best quality of oil stones. Prices of unmounted oil stones vary according to thickness and quality.



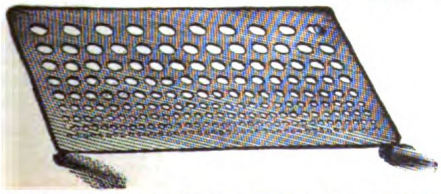
ARKANSAS OIL STONE MOUNTED.

No. 2885. In Rubber Box 4x1 in.....each, $1 00



WHET STONE IN IRON FRAME.

No. 2886. Price, 4 in. $0 30 No. 2887. 6 in. $0 50 No. 2888. 8 in. $0 65



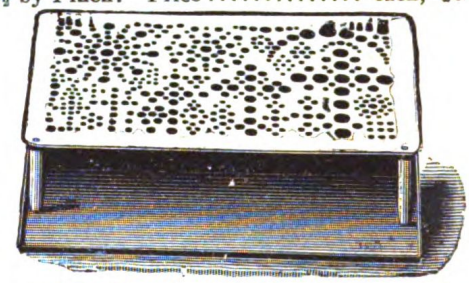
DIAMOND ASSORTING PLATES.

No. 2898. Diamond Assorting Plates, plain.....each, $2 00
" 2899. do. with Improved Trap..... " 3 00

NO. 2889.
ARKANSAS OIL STONE POWDER.
Per Bottle, large.....$0 15

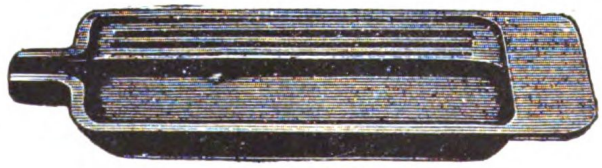
NO. 4583.
STONE OR MATERIAL SHOVEL.
Nickel-plated $0 85

NO. 28. EMERY OIL STONE.
Can be used with water or oil. Made of Greek emery; size, 3½ by 1 inch. Price ..... each, $0 15



STONE SETTERS' DESIGN PLATE, WITH IMPROVED TRAP.

		EACH.
No. 2895.	Small, with Improved Trap, to prevent Stones being lost	$3 00
" 2896.	Large, embracing almost every design	5 00
" 2897.	Pearl Sieves, with 13 sizes sieves, (plates) or Stone Sieves.....	12 00



Cut is half size.

STONE ASSORTING PLATES.

No. 2900. Stone Assorting Plates, Celluloid.....each, $1 00

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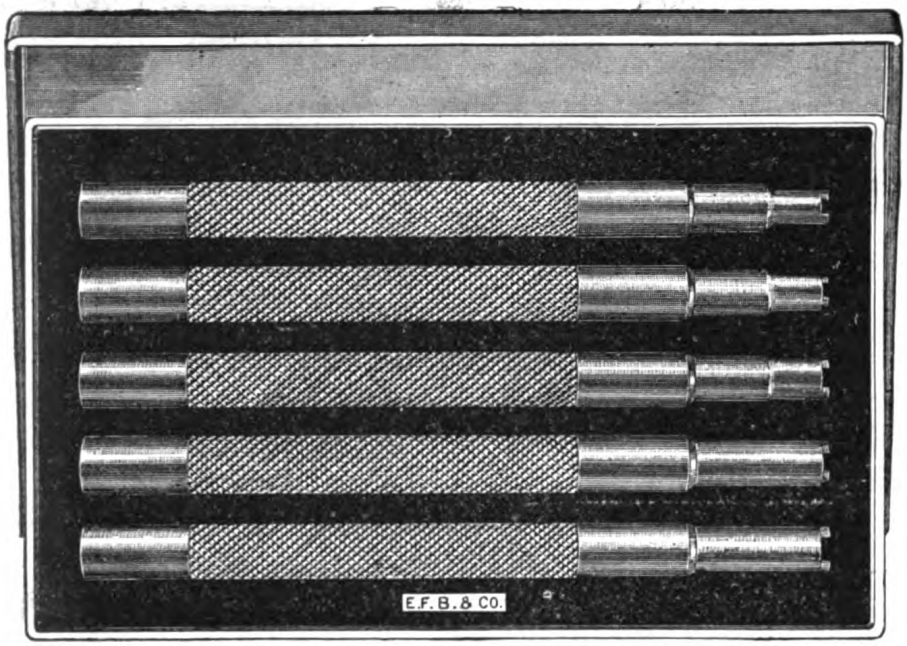
TOOLS S.

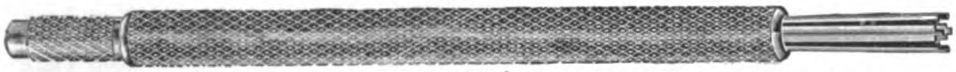


NO. 4584. THE "HERCULES" PENDANT SET SCREW DRIVERS.
Nickel-plated.....per set of 5, $1 00
Named Hercules on account of their superior strength.

No. 4589.
PENDANT SET SCREW DRIVERS—Assorted.
Per set.....$0 60

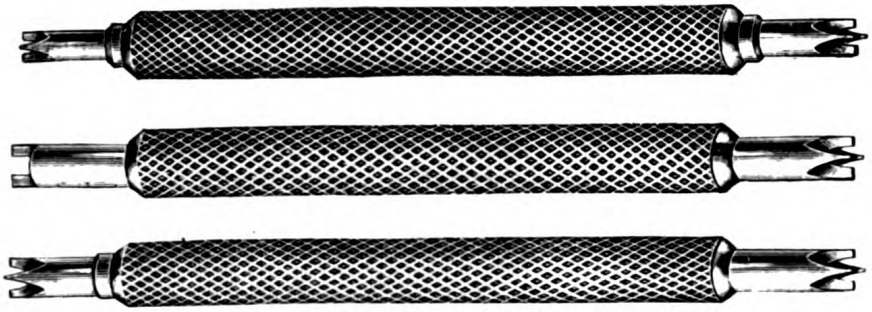
NO. 4585. DOUBLE END PENDANT SET SCREW DRIVER.
Price in 0, 6, 16 and 18 size.....each, $0 35

NO. 4586. FOUR PRONG PENDANT SET SCREW DRIVER.
With octagon ebony handle. 0 and 6, and 16 and 18 size.
As will be seen by the cuts, the points are milled out tapering so they will be very durable. They will be found superior to any in use.
Price.....each, $0 40



NO. 4587. NEW ADJUSTABLE PENDANT SET SCREW DRIVER.
Fits 0, 1, 6, 16 and 18 size watches. Can be adjusted to any size pendant set sleeves.
Price.....$0 50

No. 4590.
PENDANT SET SCREW DRIVERS.
Contains set of 5 Black Handle Pendant Set Screw Drivers, from 0 to 18 sizes.
Price as above.....$0 60



NO. 4588. PENDANT SET SCREW DRIVER.
Set of 3, nickel-plated.....$0 75

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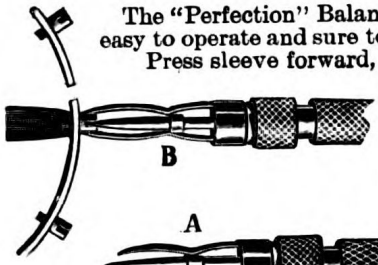
TOOLS S.

NO. 4591. BECKEN'S PERFECT TOOL FOR REMOVING AND REINSERTING BALANCE SCREWS.

No More Lost Balance Screws. No More Time Wasted When Applying Time Washers.

With the aid of this tool a pair of timing washers can be put under opposite screws in less than 30 seconds, and the loss of screws is utterly impossible. Take any size scew—0 to 18 size.

Price..... $0 75

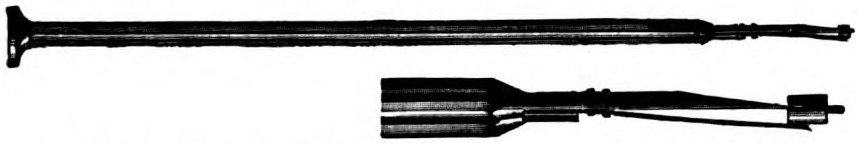


The "Perfection" Balance Screw-Driver will not mar screw head, easy to operate and sure to hold. **No lost screws.**

Press sleeve forward, as shown in cut A. Place point of blade in screw slot, B. Press gently and the jaws will close automatically on screw head. Remove screw, leaving same in driver. Put poising washers on and return screw.

NO. 4592. THE PERFECTION BALANCE SCREW-DRIVER.

Watchmakers cannot afford to be without one. Price, 65c.



NO. 3015. RIES' WATCH BALANCE SCREW-DRIVER.

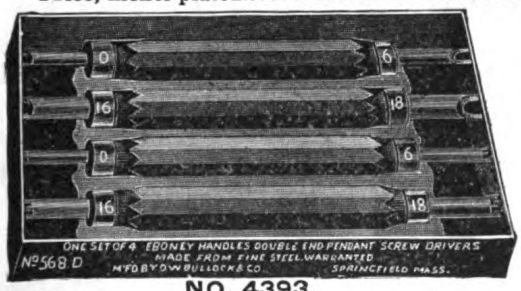
Holds the screw on taking it out to put washer or collets under, or changing holes for temperature. A great time saver. Nothing better for the purpose. Holds any size screw.

Price, nickel-plated..... $0 40

NO. 4596. ELGIN PENDANT SCREW-DRIVER.

For 0 and 18 size movements.

Price.....each, $0 20
" extra quality..... " 25



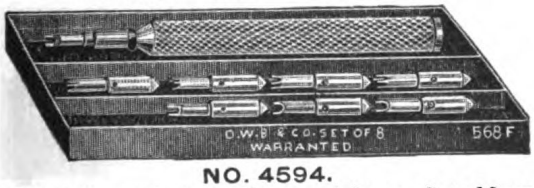
NO. 4393.

Set of 4 double end pendant screw-drivers.

Price..... .....per set, $1 40

NO. 3011. WALTHAM PENDANT SET SCREW-DRIVER.

Price..... .each, $0 20
" extra quality..... " 25



NO. 4594.

Adjustable pendant set of screw-drivers. Set of 8 separate blades.

Price, complete.....$0 85

NO. 3013. ELGIN PENDANT SET SCREW-DRIVER.

For 0, 6, 16 and 18 size movements.

Price..... each, $0 20
" extra quality ..... " 25

NO. 4595.

Adjustable Pendant Screw driver. Set of 4 separate blades. Price, complete, $0 65.

NO. 3014.

The K. & D. Perfect Balance Screw-driver and Holder.

Price, brass jaws.....$0 60

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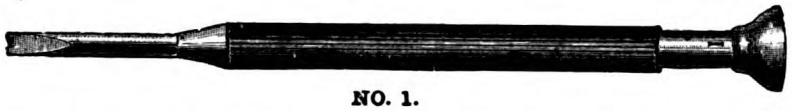
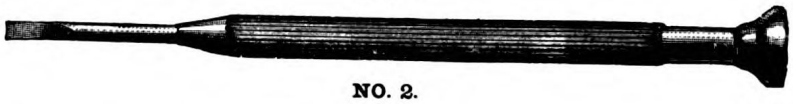
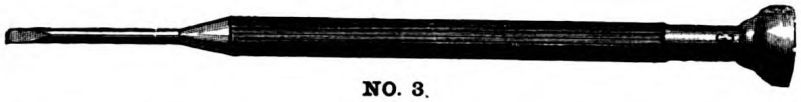
TOOLS S.



NO. 1.



NO. 2.



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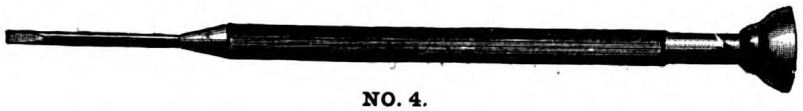

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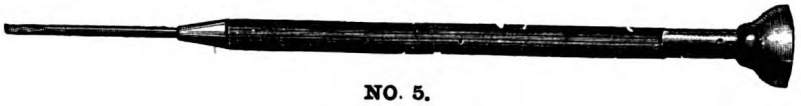
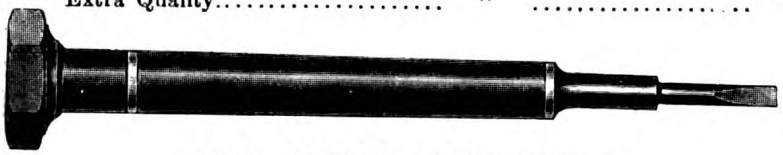


NO. 5.

NO. 3000. NICKEL-PLATED SCREWDRIVERS.

Each.....$0 10 Set of 6.....$0 35
" Extra Quality..... " 50



3001. AURORA SCREWDRIVER.

Each.....$0 40 Set of 4.....$1 25

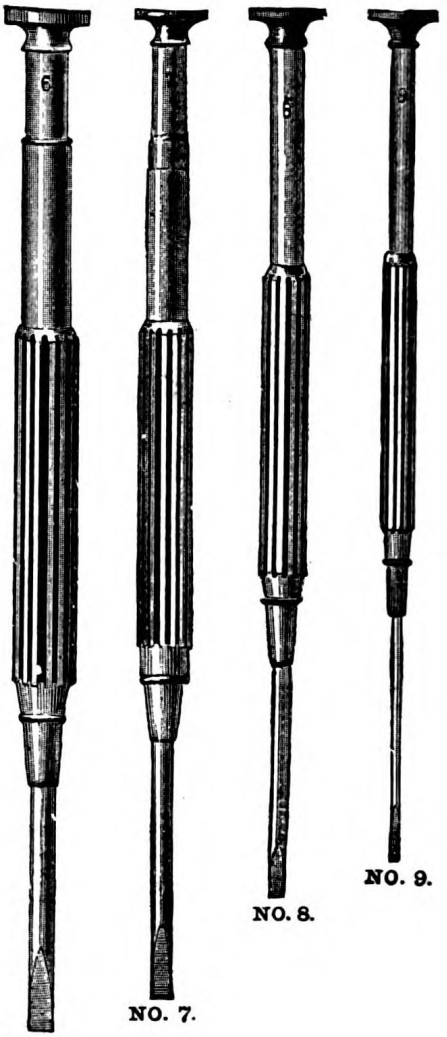
NO. 3002. LOGAN'S SCREWDRIVER.

Finely made, heavy, steel ribbed handle, and celluloid head.

Price.....each, $0 35

NO. 3005. SCREWDRIVER, PINION WIRE.

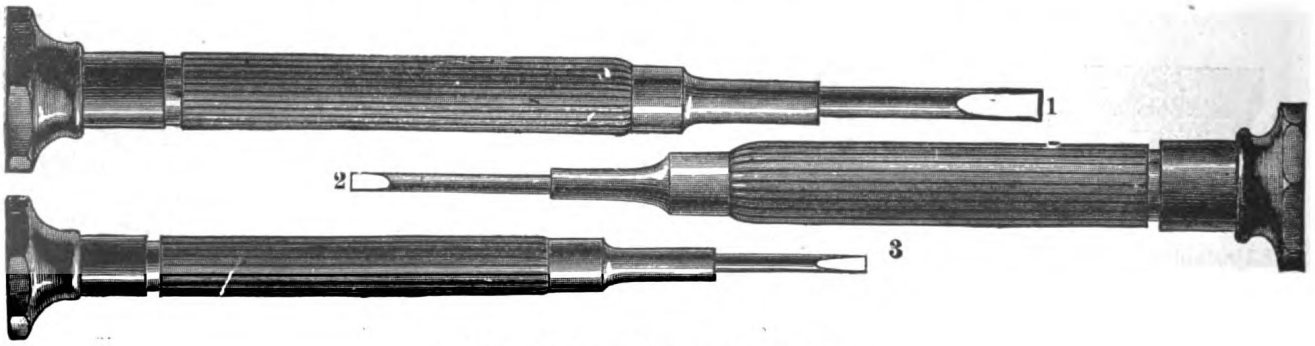
Each.....$0 10 Per doz.....$1 00



NO. 6. NO. 7. NO. 8. NO. 9.

NO. 3004. NICKEL-PLATED SCREWDRIVERS.

Each.....$0 15
Set of 4..... 60



NO. 3003. SCREWDRIVERS.

Ribbed Ebony Handle Watch and Clock, in three Sizes.

Per set of 3.....$0 45 Single, Nos. 1 and 2, each, $0 20 No. 3.....each, $0 15

All cuts of above Screwdrivers are Full Size.

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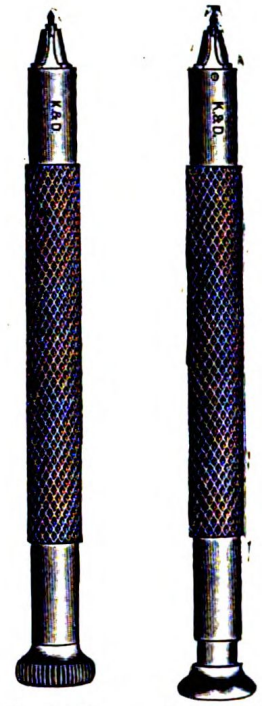
No. 4597. Elite Screw-Driver.

Price, complete, as shown above.. .....$3 00



No. 4598. No. 4599.

Timing Screw-Holder and Adjuster.

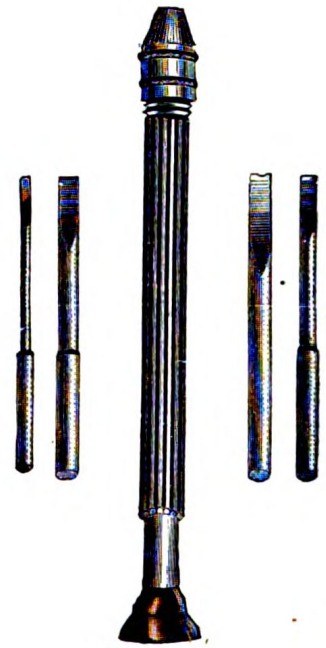
No. 4598 works with a screw, No. 4599 with a spring like a Birch Key. Both work to perfection, and are the finest of their kind yet produced.

Price, each.....$0 40

No. 4600. The Ideal Tweezer and Screw-Driver Set.

The set consists of three fine-pointed tweezers, one for recoiling hair springs, one for removing watch springs, one for removing hair-spring studs. The screw-drivers have large octagon heads.

Price, complete in leather covered case, velvet lined.....$3 00



No. 3021.

Adjustable Chuck Handle Screw-driver.

Nickel-plated, 4 blades .. $0 50

No. 3022. Imported..... 25

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TOOLS S.

NO. 3019. ACME SCREW DRIVER.

This illustration shows our Screw Drivers in sets of 6. The buttons are of different colors to denote the width of blades. No. 1, White, is the smallest; No. 2, Pink; No. 3, Blue; No. 4, Green; No. 5, Red; No. 6, Black, the largest, is an extra heavy one. They are put up in paper boxes.

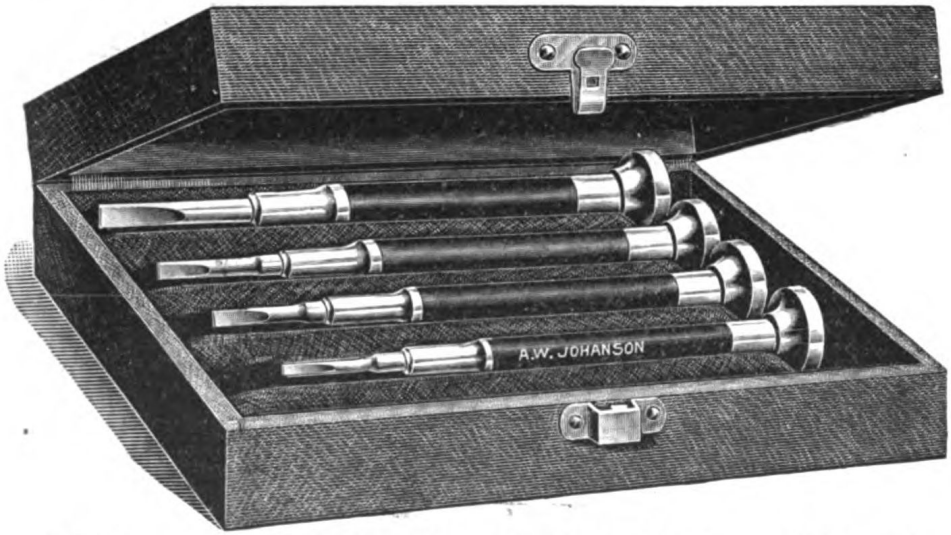
Price..... per set of 6, $1 75
Price.....each, $0 30 Extra Blades, 1 to 6.....each, 10

Vock's Screw Drivers.

No. 4604. No. 4605.

No. 4604. Set of 5, nickel-plated, in box. Price, $0 75

No. 4605. Four-Blade Screw Driver, nickel-plated, four different size blades go with this screw driver. Three blades are inside of handle. The top can be pulled out and blades easily changed. Price..... .....$0 40



JOHANSON'S WATCH SCREW DRIVERS, WITH RUBBER HANDLE.

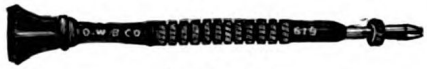
Nickel-plated Ferrules and Revolving Caps.

No. 4601. Price, per set of 4 in box.....$1 25
No. 4602. " " " " 5 without box 1 25
Steel Blades, extra, each, $0 10 .....per doz., 75

No. 4606. Adjustable Screw Driver.

One handle, four blades, nickel-plated. Price ..$0 25

Extra blades, $0 10



Cut ⅔ Size.

NO. 4603. TIMING SCREW HOLDER AND REMOVER.

For removing and replacing timing screws in balance wheels. Watchmakers will find in this a very useful bench companion.

Price, nickel.....each, $0 25

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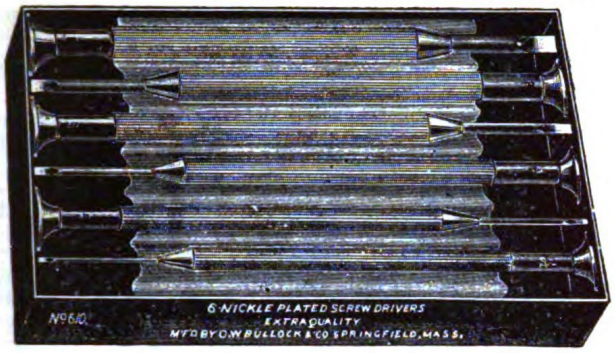
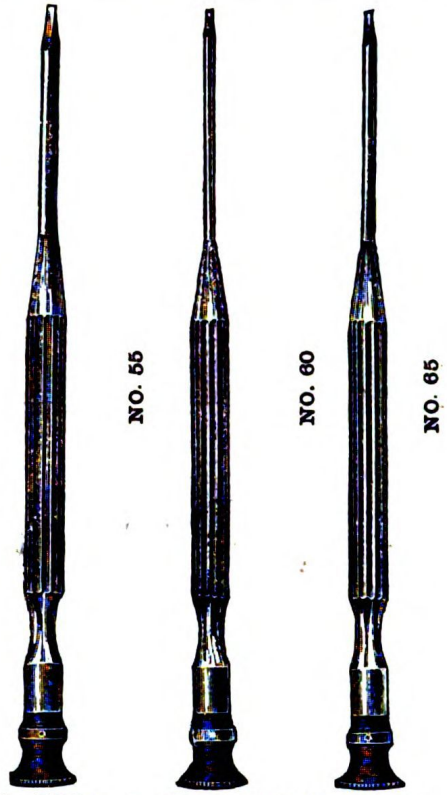
TOOLS 8.



FIRST QUALITY NICKEL-PLATED WATCH SCREW-DRIVERS.

No. 4607	Price in paper box, set of six	$0 65
" 4608	" " " " five	60
" 4609	" single one	15



NO. 3009. GEM SCREW-DRIVERS.
The best screw-driver. Made in 6 different sizes varying from No. 40 to No. 65.
Price, set of five, $1 10 Price.... .each, $0 25
Imported " 65 Price..... " 15

FIRST QUALITY NICKEL-PLATED WATCH SCREW-DRIVERS.

No. 4610	Price in paper box, set of six	$1 10
" 4611	" " " " five	90
" 4612	" single one	20

FIRST QUALITY ALLUMINUM SCREW-DRIVERS.

No. 4613	Price in paper box, set of six	$1 50
" 4614	" " " " five	1 25
" 4615	" single one	25

No. 3008. Nickel-plated, assorted celluloid heads. Each, $0 25 Set of 5, $1 15

NO. 4616
Cut two thirds size.
THE HERCULES SPECTACLE SCREW-DRIVER.
Price.....each, $0 50

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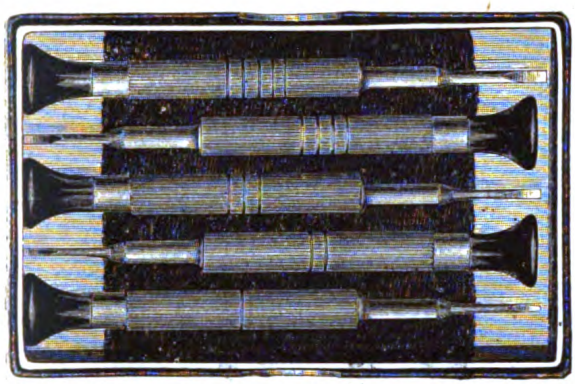
TOOLS S.

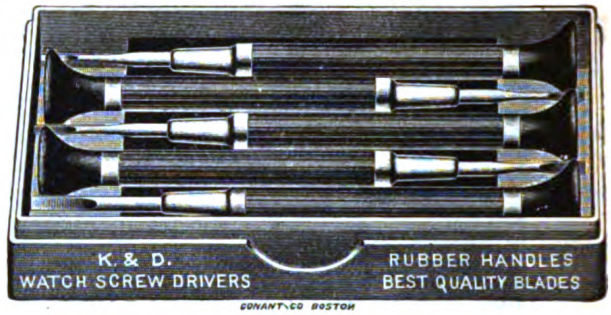


(Cut ⅔ Size.)

Waltham Screw-Driver.

Handles are thin tubing with milled surface, making a light screw-driver with first-class grip. Blades are detachable. Rings are cut in body of handle to denote sizes.

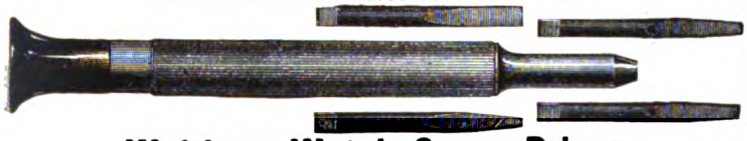
No. 4618. Set of five in box.....$1 50
No. 4619. Single screw-driver..... 30
Extra blades..... 05



No. 4617.

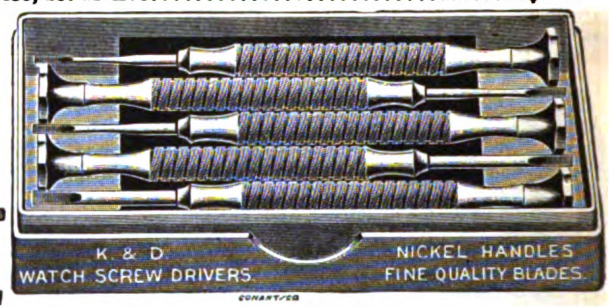
K. & D. Screw-Drivers.

Rubber handle and top, extra fine blades.
Price, set of five.....$1 50



Waltham Watch Screw-Driver.

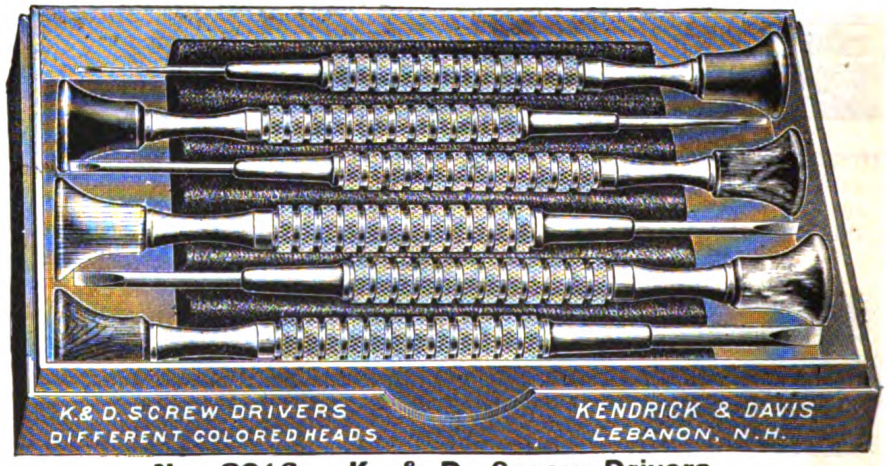
No. 3036. With 4 detachable blades.....$0 35



No. 3023.

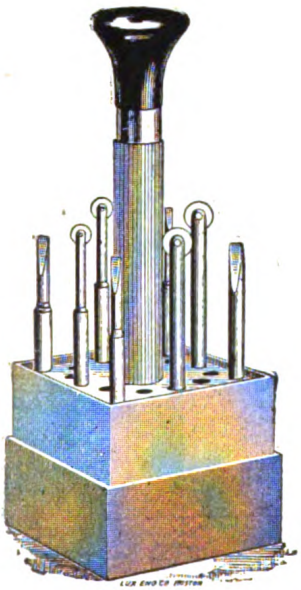
K. & D. Screw-Driver.

Nickel-plated. Best quality blades.
Price, set of five.....$0 75
No. 3018. Imitation..... 65



No. 3016. K. & D. Screw-Drivers.

Extra fine tempered blades, nickel-plated handles, polished heads.
Price, set of six.....$1 50



No. 3024.

Waltham Screw-Driver, Countersinks and Burnishers.

Set of four screw-drivers and four countersinks....$1 00

No. 3024½.
Set of four screw-drivers and twelve countersinks. $2 00

No. 3028. Made with Light Blades for Small Work.
No. 3028. 5¾ in. long..$0 25 No. 3029. 6¾ in. long..$0 30 No. 3030. 7½ in. long..$0 35

No. 3031. Adapted for any Heavy Work.

Nos. 3028-3031. The Vulcan Screw-Drivers.

(Patented May 7 and October 1, 1889.)
No. 3031. 9 in. long..$0 50 No. 3032. 10⅛ in. long..$0 60 No. 3033. 12½ in. long..

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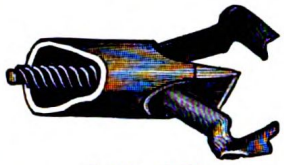
TOOLS S.

Sectional View.



Sectional View.

No. 3025. Patent Adjustable Screw-Driver and Holder.

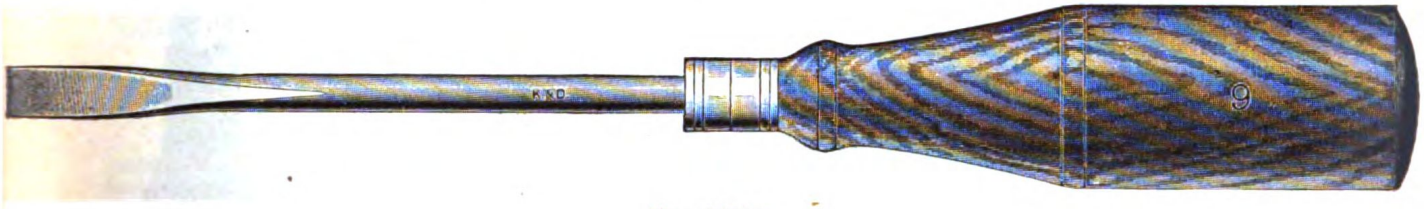
This is the most convenient clock screw-driver made to get inside of clock.

No. 3025. 4-inch blade.....$0 50 **No. 3026.** 6-inch blade.....$0 65 **No. 3027.** 8-inch blade.....$0 75

No. 3034. The Champion Screw-Driver.

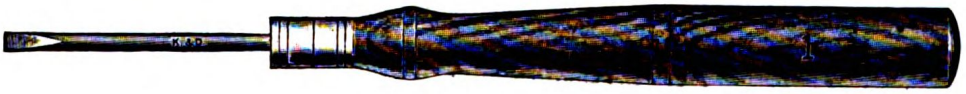
Forged from toughest steel. Are intended for and will stand harder work than any other screw-driver.

2½-inch blade.....$0 25 3-inch blade.....$0 30 4-inch blade.....$0 40 5-inch blade.....$0 45 6-inch blade.....$0 50



No. 4620½.

No. 4621.

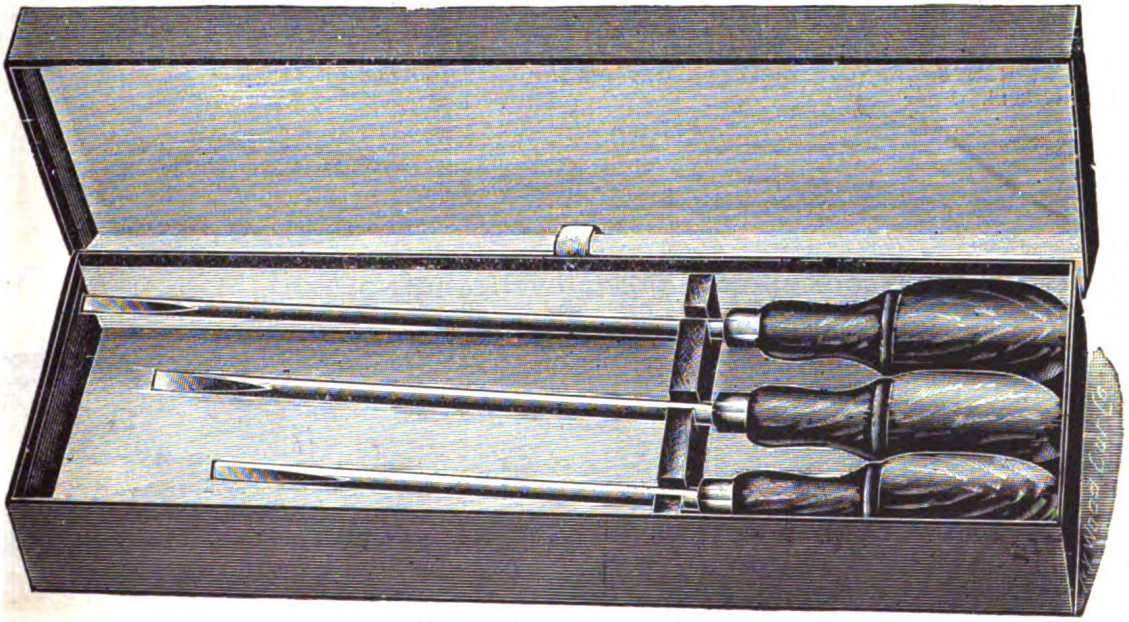


No. 4622.

The K. & D. Superior Clock Screw-Driver.

These screw-drivers are made of the finest quality Stub's steel, beautifully finished and polished; Rosewood handles; every blade is tempered and tested and will neither bend nor break.

Price, No. 4620½. Each.....$0 35 **No. 4621.** Each.....$0 35 **No. 4622.** Each.....$0 25



Clock Screw-Drivers.

Set of 3 in paper case. Length of blades, 4½, 5½ and 6½ inches. Rosewood handles.

No. 4623. Price, per set.....$0 85

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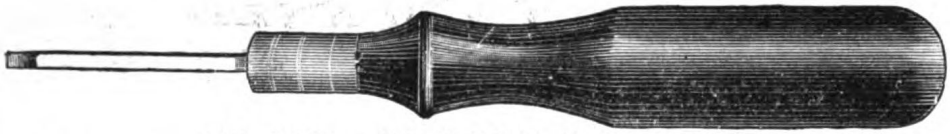
TOOLS S.

NO. 3037. CLOCK SCREWDRIVER.

Birch Handle ..... each, $0 20
Ebony Handle ..... " 30

LONG CLOCK SCREWDRIVER.

No. 3038. Length, 7 inches, Cherry Handle $0 15
" " Nickel-plated 20
No. 3039. Length, 7 inches, Ebony Handle 20
" " Nickel-plated 25

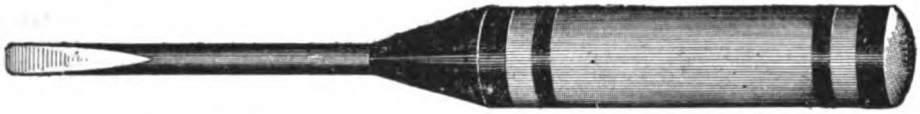


NO. 3040. SPECTACLE SCREWDRIVER.

Birch Handle $0 20
Ebony Handle 25

CLOCK SCREWDRIVER.

No. 3042. Length, 5½ inches, Rosewood Handle, Tempered Blade $0 25
No. 3043. Length, 7½ inches, Rosewood Handle, Tempered Blade 30



IDE'S HANDY BENCH SCREW-DRIVER
WITH INTERCHANGABLE BLADES AND HARD RUBBER HANDLE
No. 3044. Price ..... each, $0 25

NO. 3041: CLOCK SCREW-DRIVER.

Birchwood Handle, $0 25
Birchwood Handle, Large, 3½-in. long, diameter 1 in 30
Ebony Handle 35

Two-thirds Size.

DOUGLAS' PATENT COMBINED SCREWDRIVER AND HOLDER.

No. 3045. 3½ inch Blade ..... $0 45 | No. 3047. 4½ inch Blade $0 60
No. 3046. 4 inch Blade ..... 50 | No. 3048. 6 inch Blade 85

NO. 3049. DOUBLE ACTION RATCHET SCREWDRIVER.

Simply sliding the button from one side of the plate to the other throws one pawl out and lets another into the teeth of the ratchet, changing from a right to a left-hand action instantly; or, by leaving the button midway, the blade remains stationary, like a common driver. Made of the best materials, in a first-class manner, with BLACK HANDLES.

No. 3049. Price: 4-in., $0.75 No. 3050. 5-in., $0.85 No. 3051. 6-in., $1.00 No. 3052. 8-in., $1.12 No. 3053. 10-in., $1.25

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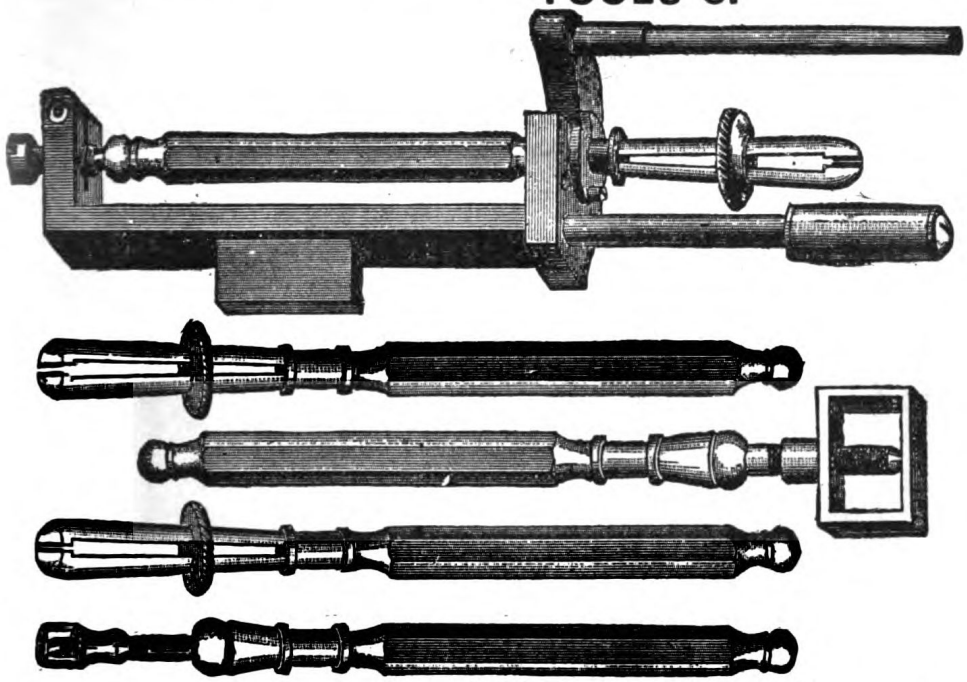
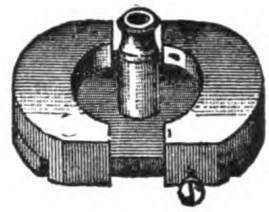
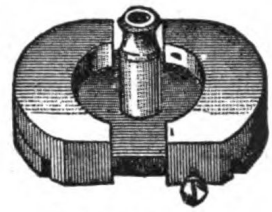
TOOLS S.







LAPIDARIES.

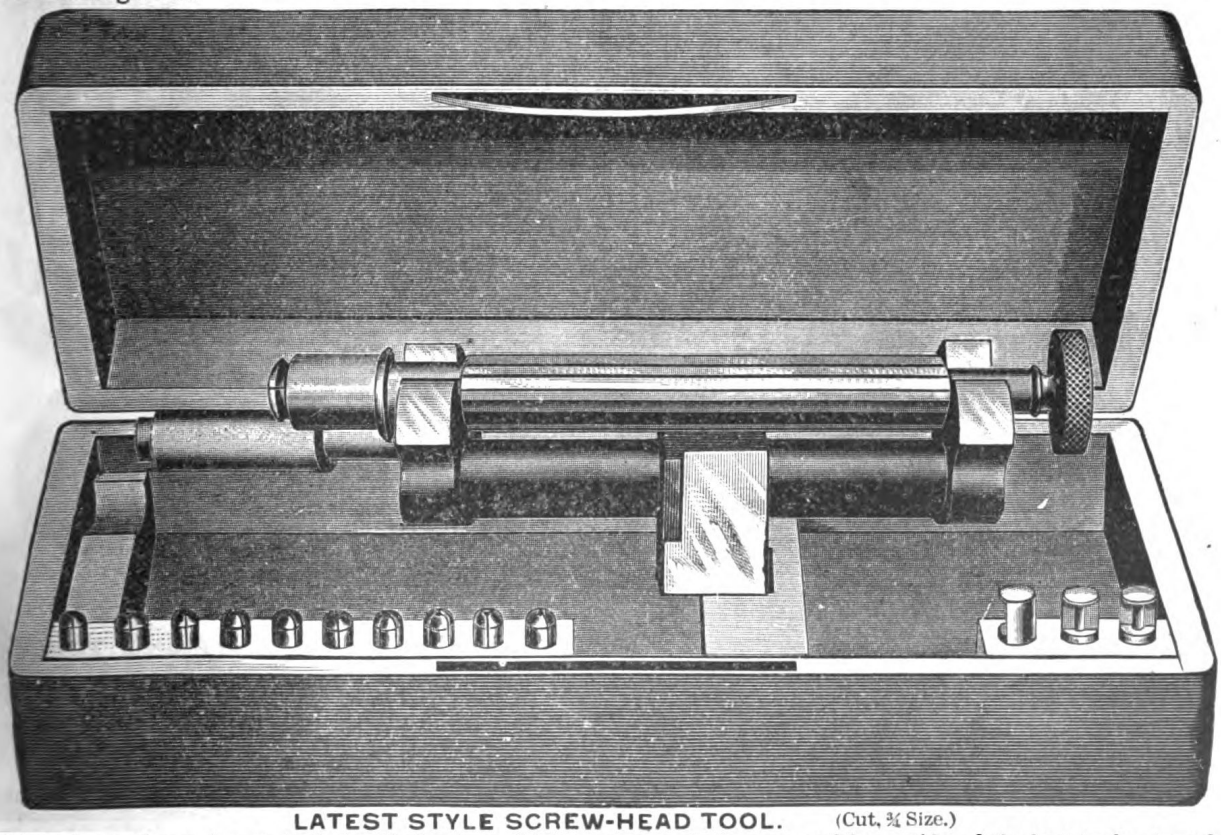
PLAIN SCREW HEAD TOOL.

No. 3054. **Plain**.....$1 25
" 3055. **With Lapidaries**..... 2 50
No. 3056. **Nickel-plated**.....$2 00
" 3057. **With Lapidaries, Nickel-plated**..... 3 50

NO. 3058. NEW STYLE SCREW-HEAD TOOL.

Price, with Lapidaries, Nickel-plated..... $3 75

The heads of this tool are made on the principle of the American split chuck. The one lanterne will hold all the different heads, which, by turning the screw, open or close. It is a decided improvement upon the old style tool, as the article to be polished is much more easily handled and will always run true. The lapidary has a composition and zinc face for both starting and finishing work.



LATEST STYLE SCREW-HEAD TOOL. (Cut, ¾ Size.)

This tool, as shown in cut, includes 10 chucks and 3 lanternes ready for use, and is considered the best tool yet made.

No. 3059. **10 chucks, wood case, $4 50** No. 3060. **6 chucks, paper case, $2 00** No. 3061. **6 chucks, wood case, $3 00**

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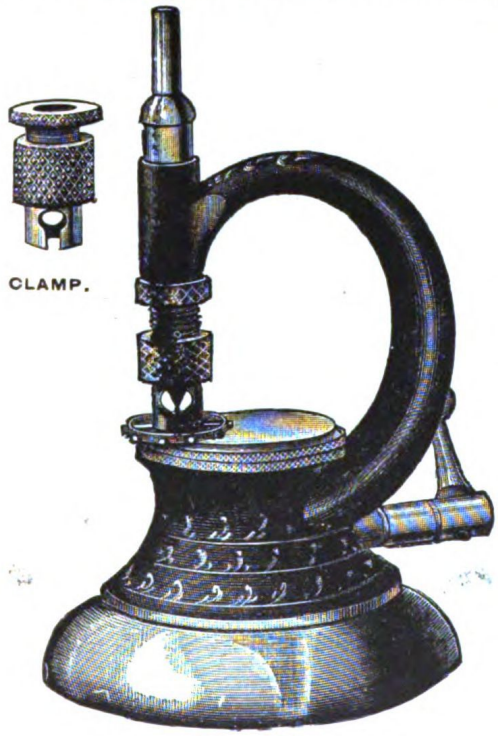
TOOLS S.

NO. 3062. STAKING TOOL.

With 24 Punches and 4 Stumps, extra quality.
Price.....$2 90
Extra Finish, same as above..... 3 25



NO. 4624.
PATENT WHEEL PROTECTING CLAMP FOR STAKING TOOLS.

For clamping and holding in position the arms of Balance and other wheels while driving out Staffs and Pinions, thereby removing all danger of getting the wheels out of true, and arms bent out of shape. The illustration sufficiently describes how to apply and use it.
Price, nickel-plated.....$1 00

NO. 4625. THE PERFECTION STAKING TOOL.

This Staking tool is one of the best tools placed on the market, with additional new punches and stumps; there are 53 punches and 16 stumps, which will meet every possible requirement of the most progressive watchmaker. We fully guarantee the accuracy of this tool in every respect.

Price complete, as shown above.....$12 50

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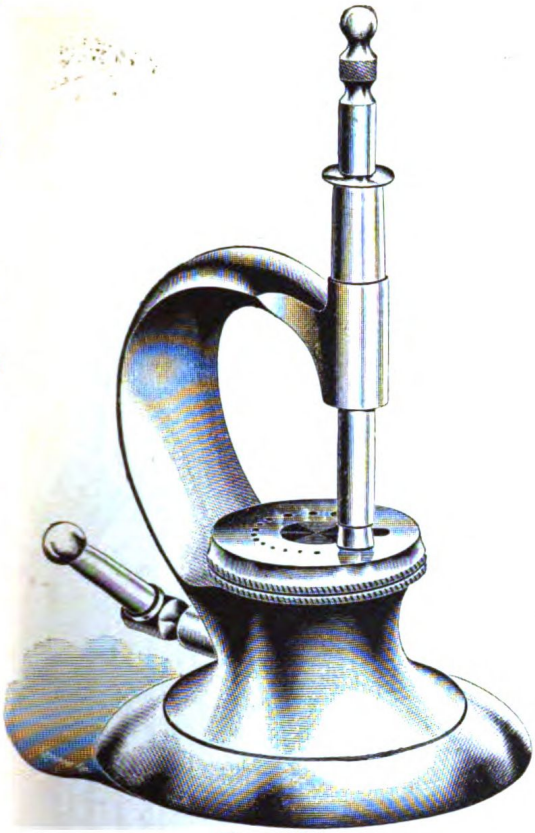
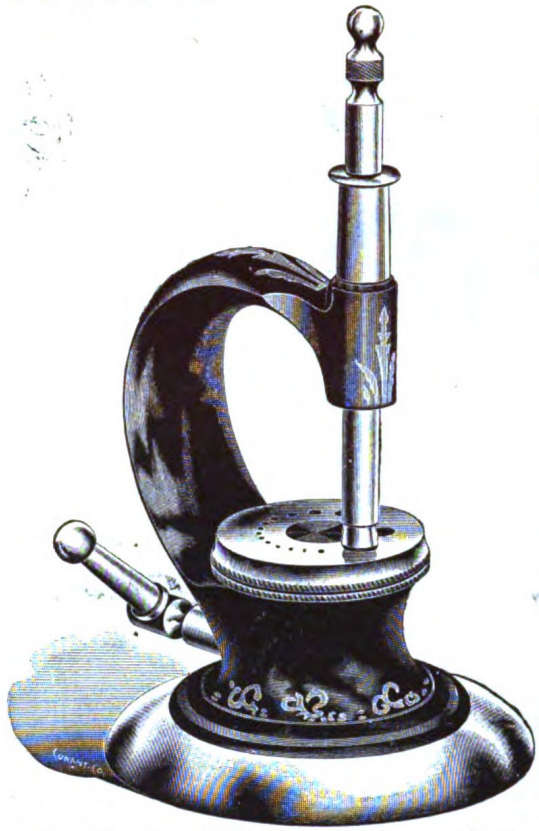
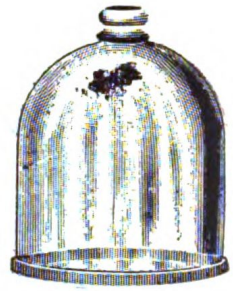
TOOLS S.



No. 4626.
Price, 50 Punches, 14 Stumps, Revolving Stand and Glass Globe..... $7 00



No. 4627 Price, 24 Punches, 8 Stumps, $4 50
No. 4628 " 32 " 8 " 5 00
With Revolving Stands and Glass Globes.



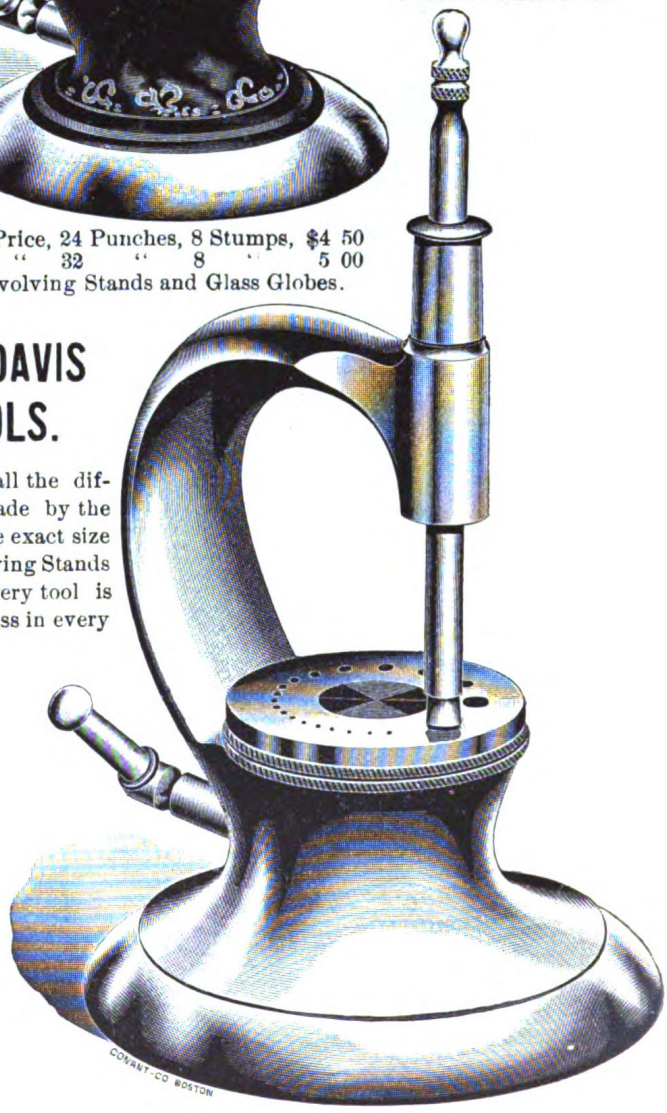
GLASS COVERS FOR STAKING TOOLS.

No. 4631 Small, 3¾ in. diam. Each, 50c.
No. 4632 Hall's, 4 in. diam. Each, 65c.
No. 4633 Union, 4½ in. diameter. Each.....75c.
No. 4634 Rivett's or K. & D., 5 in. diam. Each...75c.

KENDRICK & DAVIS STAKING TOOLS.

We show on this page all the different sizes and styles made by the above firm. The cuts are exact size of Staking Tool in Revolving Stands with Glass Globes. Every tool is warranted to be first-class in every respect.

No. 4629.
Price, with 50 Punches, 14 Stumps, Revolving Stands and Glass Globe.....$10 00



PERFECTION No. 4630.
Price, with 55 Punches, 18 Stumps, Revolving Stand and Glass Globe.....$15

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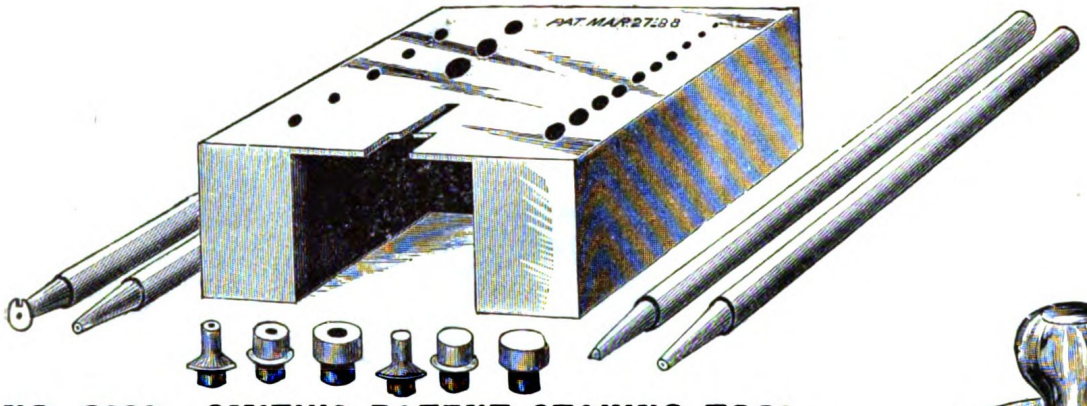
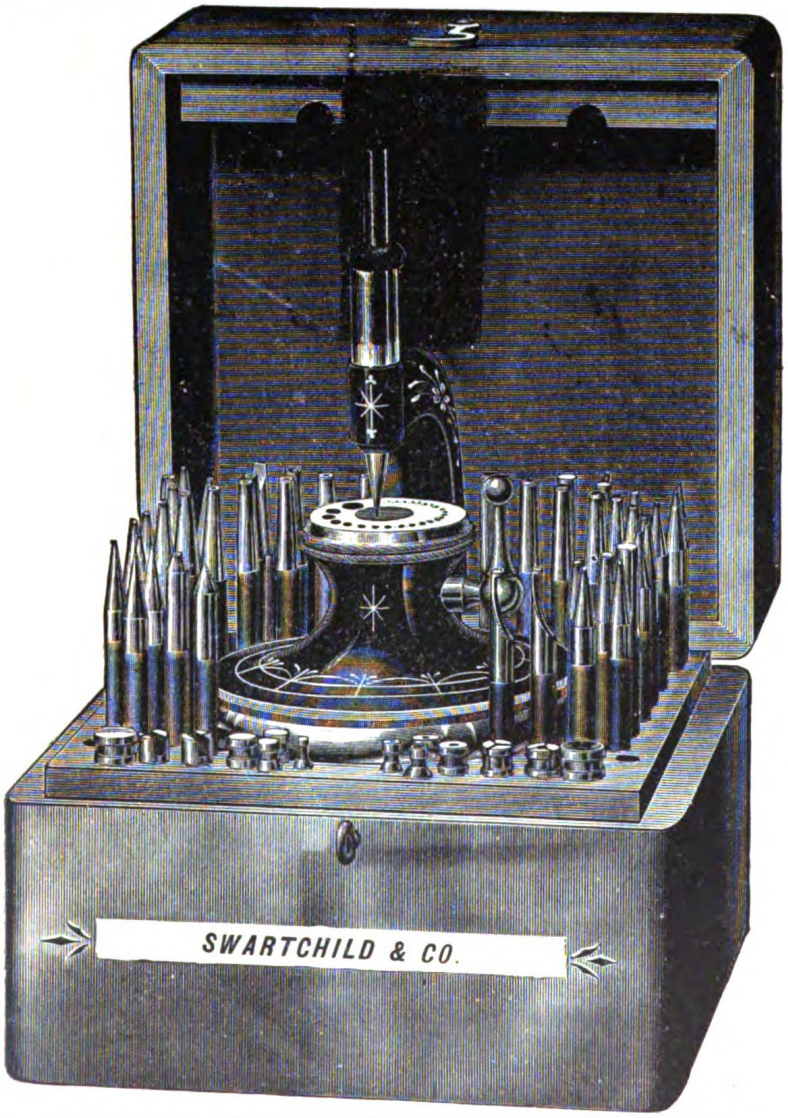
TOOLS S.



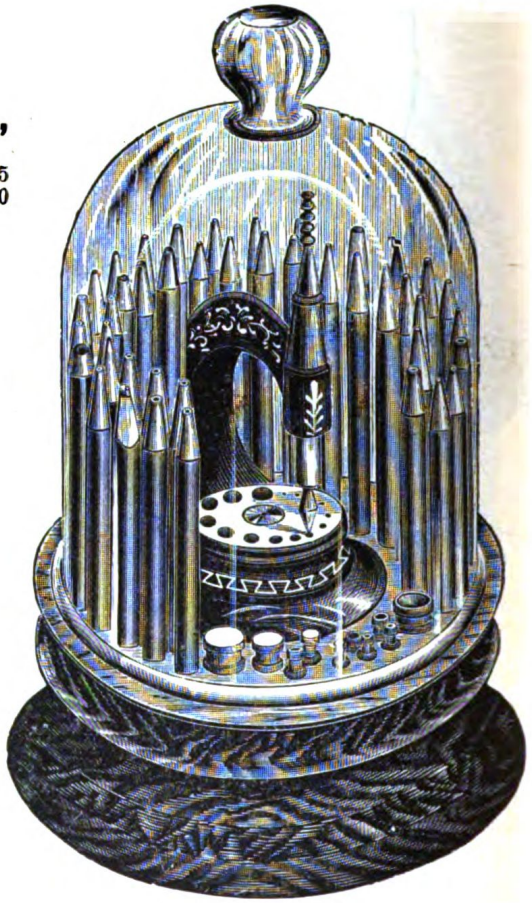
NO. 3080. SMITH'S PATENT STAKING TOOL, ANVIL AND SCREW HOLDER COMBINED.

Plain $2 25
Nickel-plated 2 50



STAKING TOOL WITH MAHOGANY CASE.

No. 3070. With 48 punches and 14 stumps..... $8 00
No. 3071. With 24 punches and 4 stumps..... 3 50
These tools are warranted to be first-class in quality and finish.



Cut is one-half size.

STAKING TOOLS.

Genuine G. Boley

No 3075½. With 50 punches and 15 stumps
Price..... $6 50

J. G. Hall's

No. 3067. With 48 punches and 14 stumps
Price, nickel-plated..... $12 25

F. W. Hall's

No. 3068. With 48 punches and 14 stumps
Price, nickel-plated..... $11 00

Imitation, Hall's

No. 3076½. Same as above and warranted perfect in every respect.
Price $6 00

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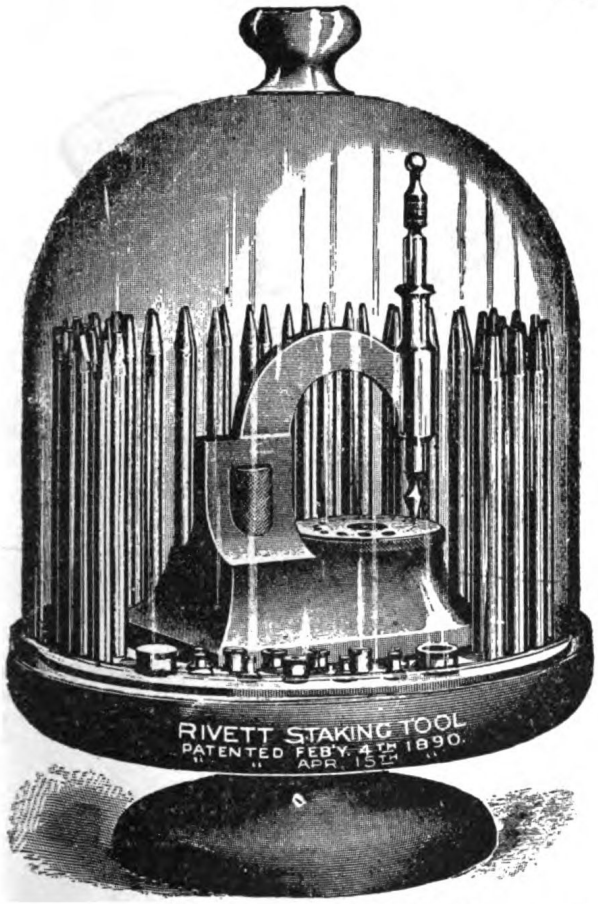
TOOLS S.

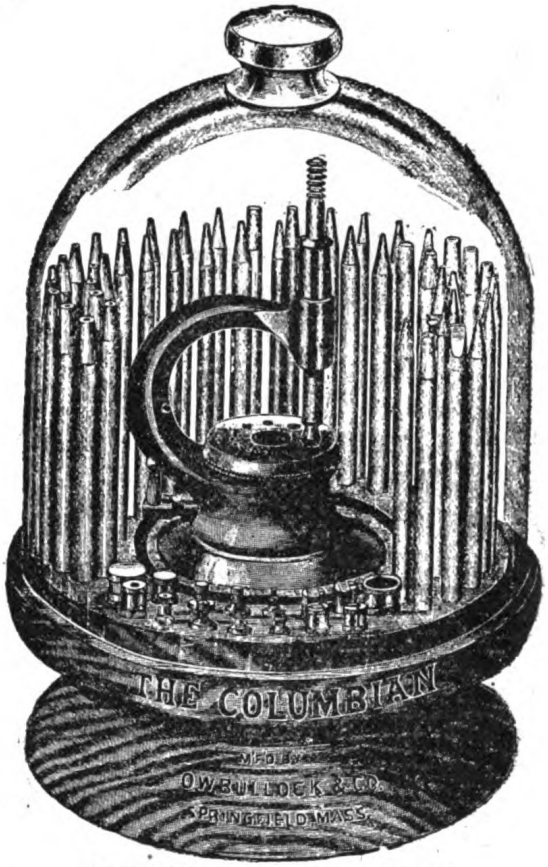


RIVETT STAKING TOOL.

No. 3072. With 50 punches and 13 stumps, nickel-plated...$12 50
No. 3072½. With 54 punches and 13 stumps, nickel-plated stand and shade to hold 100 punches and 20 stumps..... 15 00

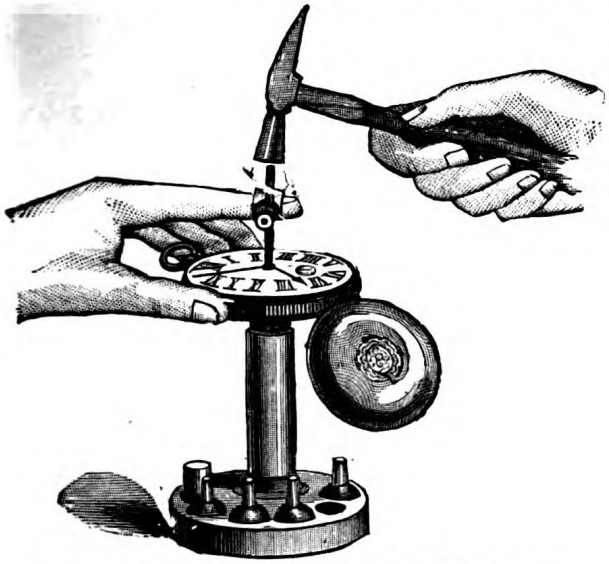
THE NEW RIVETT STAKING TOOL.

No. 4638. 100 punches and 20 stumps, with stand and shade 22 50



COLUMBIA STAKING TOOL.

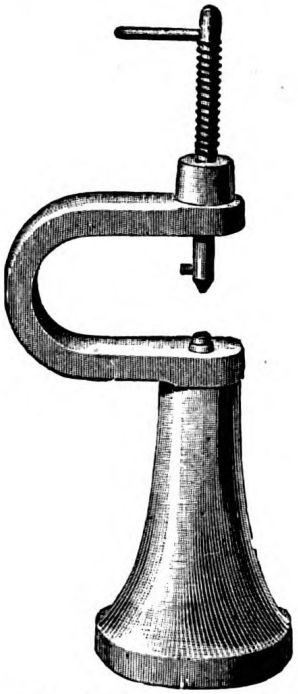
No. 4639. With 50 punches and 15 stumps, nickel-plated $12 00



NO. 3082. RIVETING STAKE TOOL.

Has six pieces for driving on hands, driving out center arbors, etc., and a small stake for riveting. A thimble holds the punch and enables the workman to dispense with assistance, as shown in cut.

Price.....$0 50



NO. 3079. HAND STAKING TOOL.

For riveting watch hands. Price.....$0 65

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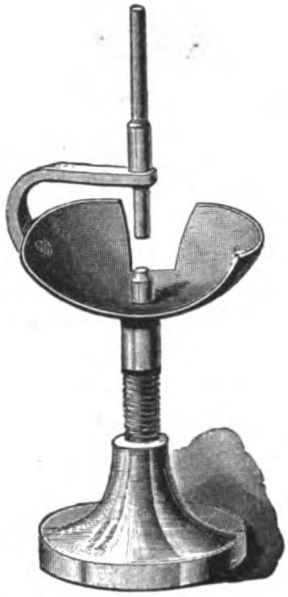
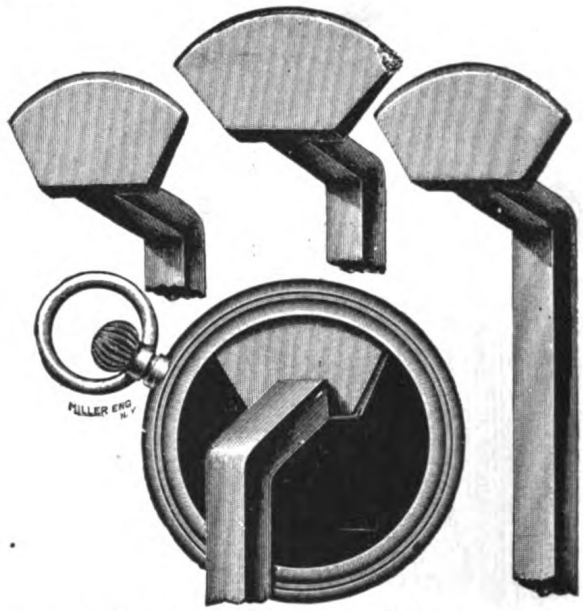
TOOLS S.



No. 4640. Watch Hand Staking Tool.

The cup and arm is movable on the upright. This will always keep the movement in a straight position. Cup is cut out to allow for watch case lid.

Price, N. P.....each, $0 75

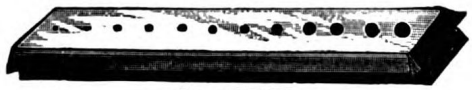


Nickel-Plated Case Stakes.

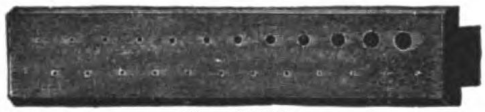
No. 4643.	Price.....per set of 3,	$1 00
" 4644.	Small, for 0, 1 and 6 size cases.....each,	35
" 4645.	Medium, for 14 and 16 size cases..... "	35
" 4645½.	Large, for 18 size cases ..... "	35

No. 3084. Large Riveting Stake.

Price, nickel-plated.....each, $0 45



No. 3085.



No. 3089.

Riveting Stakes.

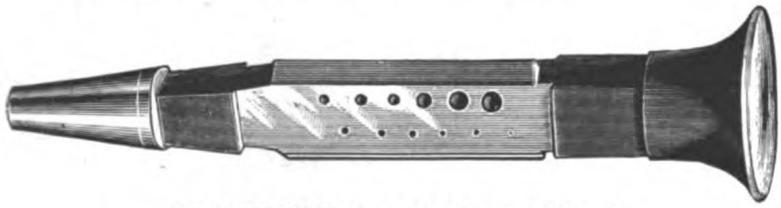
No. 3085.	Brass.....	each,	$0 10
" 3086.	" Nickel-plated.....	"	20
" 3087.	Steel.....	"	20
" 3088.	" Nickel-plated.....	"	30
" 3089.	Double.....	"	40
" 3090.	Nickel-plated.....	"	60
" 3091.	Riveting Stake, with joint, like No. 3085, but opens apart in the center.....	"	60
" 3092.	Same, Nickel-plated.....	"	75

Cut ½ Size.

New Spoon Stakes.

In three sizes. No. 1, tea; No. 2, desert; No. 3, table. Will be found very handy for removing dents from, and shaping up spoons.

No. 4641.	Plain, either size or assorted...each,	$0 30
" 4642.	Nickel, " " extra..... "	20



Case and Riveting Stake Combined.

No. 3083.	Price .....each,	$0 50
" 3083½.	Nickel-plated..... "	75

No. 3093. Boley Riveting Stake.

Nickel-plated, with brass and steel adjustable centers. Tempered and a first-class made tool.

Price.....each, $0 75

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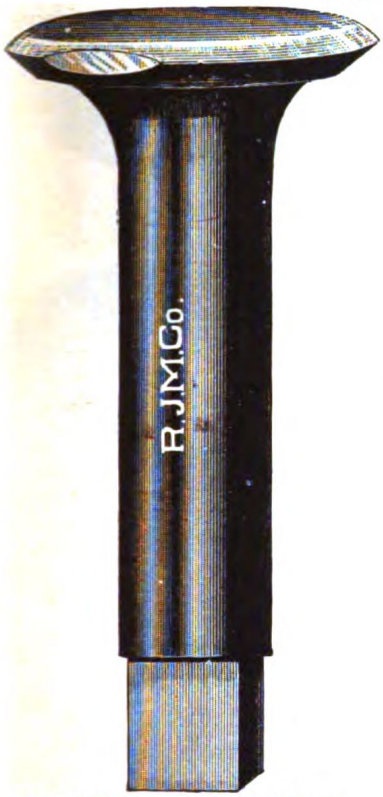
TOOLS S.

REVERSIBLE CASE STAKE.

Especially handy in many cases, and entirely new.

No. 3094. Plain.....each, $0 50
" 3095. Nickel-plated..... " 65



NO. 3096. (Cut Full Size.)

SOLID STEEL CASE STAKE.

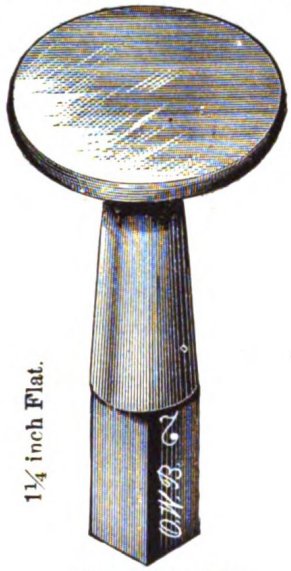
No. 1, for 18 size; No. 2 for 16 size; finely finished.

Price.....each, $0 50
Nickel-plated..... " 65

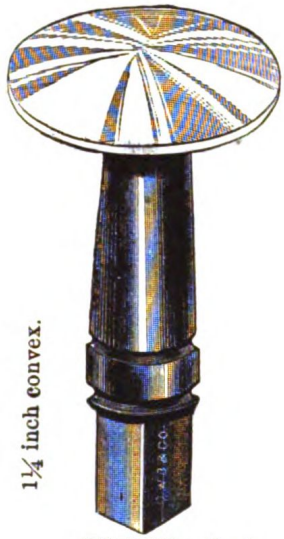
Cut is Full Size.

NEW AND IMPROVED STEEL CASE STAKE.

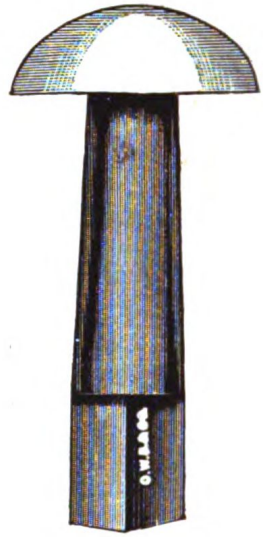
No. 3098. Plain.....price, $0 50 Nickel-plated.....$0 65



NO. 3099. Flat.



NO. 3100. Oval.



NO. 3101.

EXTRA HIGH.

Price.....each, $0 35
Nickel-plated " 50

CASE STAKES.

Sizes: 1⅛. 1¼. 1½, 1¾ inch diameter.

No. 3099 Flat, or No. 3100 Oval.....each, $0 25
Nickel-plated..... " 40
No. 3102. Boxwood, Oval or Flat Face..... " 10
" 3103. Ebony, " " " ..... " 20
" 3104. Horn, " " " ..... " 25

NO. 3097. NEW STYLE STEEL CASE-STAKE.

Price.....$0 20
Nickel-plated..... 30

NO. 3105. EYE-GLASS STAKE.

To be used in a vise while removing screws from spectacles and eye-glasses. The best tool ever made for that purpose. Those handling eye-glasses know how difficult it is to extract screws, and will appreciate this tool.

Price, plain....each, $0 25 Nickel-plated....each, $0 45

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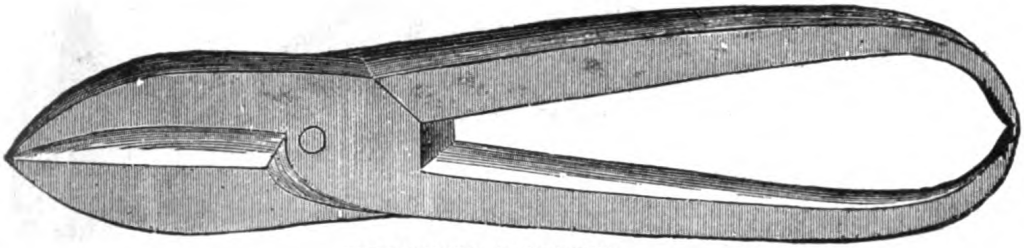
TOOLS S.



BROWN'S SHEARS.

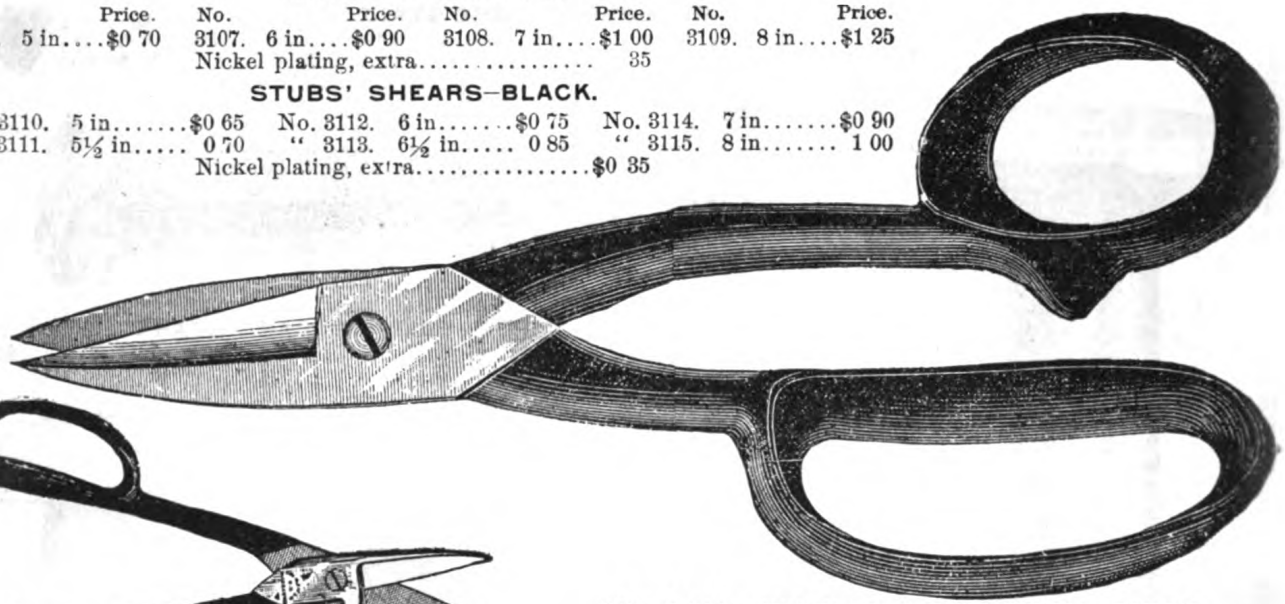
No.		Price.	No.		Price.	No.		Price.	No.		Price.
3106.	5 in.	$0 70	3107.	6 in.	$0 90	3108.	7 in.	$1 00	3109.	8 in.	$1 25

Nickel plating, extra..... 35

STUBS' SHEARS—BLACK.

No. 3110.	5 in.	$0 65	No. 3112.	6 in.	$0 75	No. 3114.	7 in.	$0 90
" 3111.	5½ in.	0 70	" 3113.	6½ in.	0 85	" 3115.	8 in.	1 00

Nickel plating, extra.....$0 35

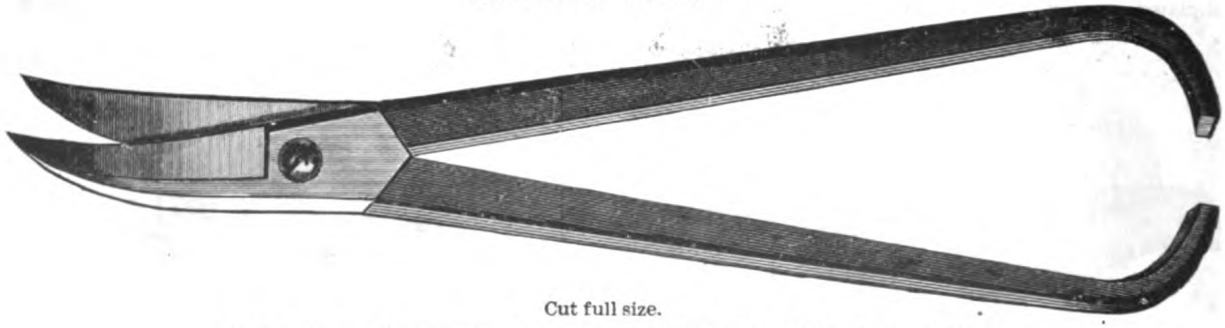


Cut about one-third size.

NO. 3117. JEWELERS' SNIPS.
With wire cutter.....$0 70

NO. 3116. JEWELERS' OR DENTAL SNIPS.
Wrought iron and steel blades, for cutting metals. A handy tool about a bench.
Each.....$0 55

NO. 3118. Cut full size.



Cut full size.

NO. 3119. NEW STYLE JEWELERS' OR DENTAL SNIPS.
Made of best steel, both straight or bent, as shown in cut.

No. 3118. Price.....each, $0 60 Nickel plated, $0 80 No. 3119. Price.....each, $0 65 Nickel plated, $0 95

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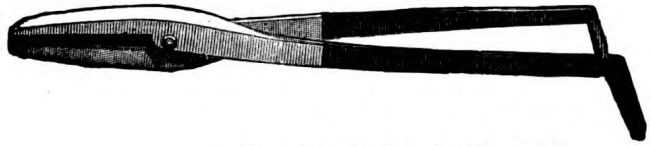
TOOLS S.

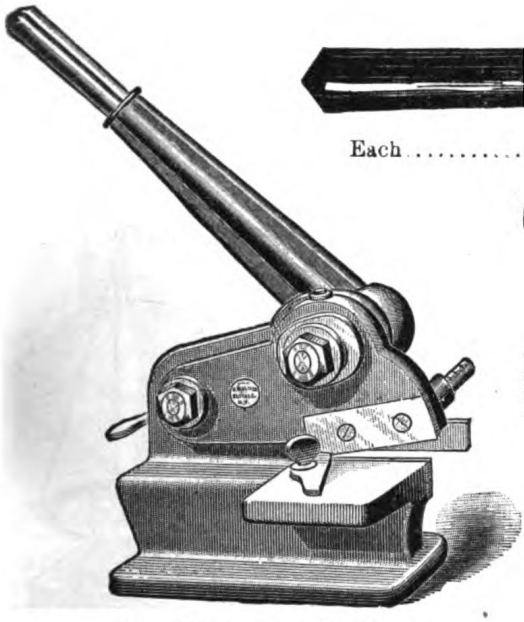
No. 3127. Screw End Finisher.

Each.....$0 25 Nickel-plated, $0 35



Jewelers' Bench Shears.

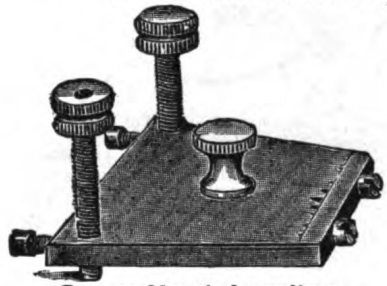
No. 3123. Bench cut, 8 inches.....each, $5 00
No. 3124. " 7 " ..... " 4 00
No. 3125. " 6 " ..... " 3 50



No. 3120. Bench Shears.

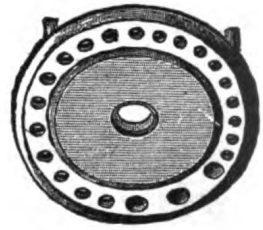
(Patented May 12, 1885.)

Weight, 25 lbs. Price.....each, $15 00



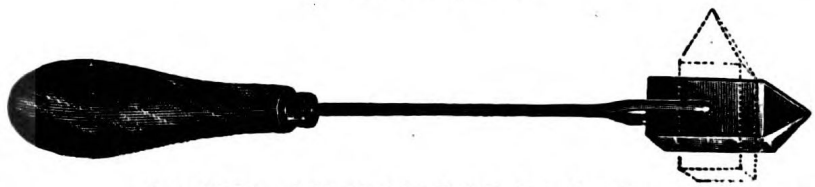
Screw Head Leveling and Finishing Tool.

No. 3128. Each.....$0 60
" Nickel-plated, 90



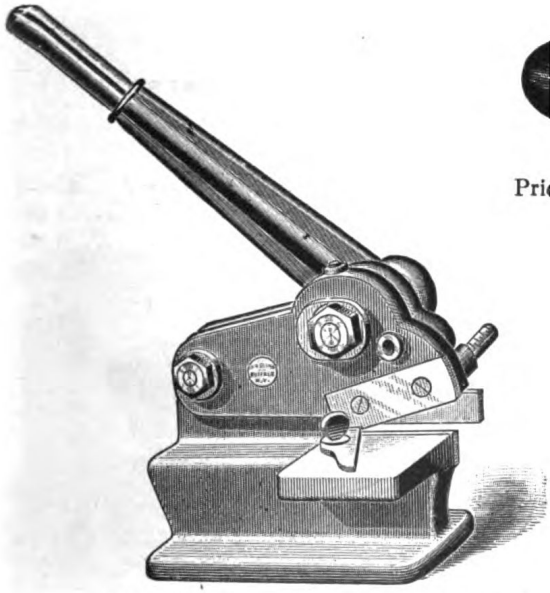
Screw Stand.

No. 3126. Each, $0 15



No. 4651. Adjustable Soldering Copper.

Price.....each, $0 20

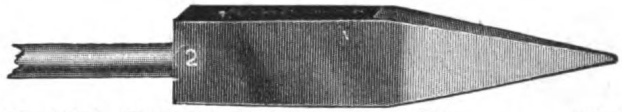


No. 3121. Combined Shear and Rod Cutter.

(Patented May 12, 1885.)

Weight, 25 lbs. Price....each, $15 00

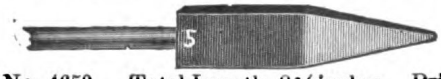
No. 4646. Handle and Blade, 12½ inches Price...each, $0 30



No. 4647. Total length, 11½ inches. Price.....each, $0 25

No. 4648. Total Length, 9 ½ inches. Price.....each, $0 20

No. 4649. Total Length, 8¾ inches. Price..... each, $0 15



No. 4650. Total Length, 8¾ inches. Price.....each, $0 10

SOLDERING COPPERS.

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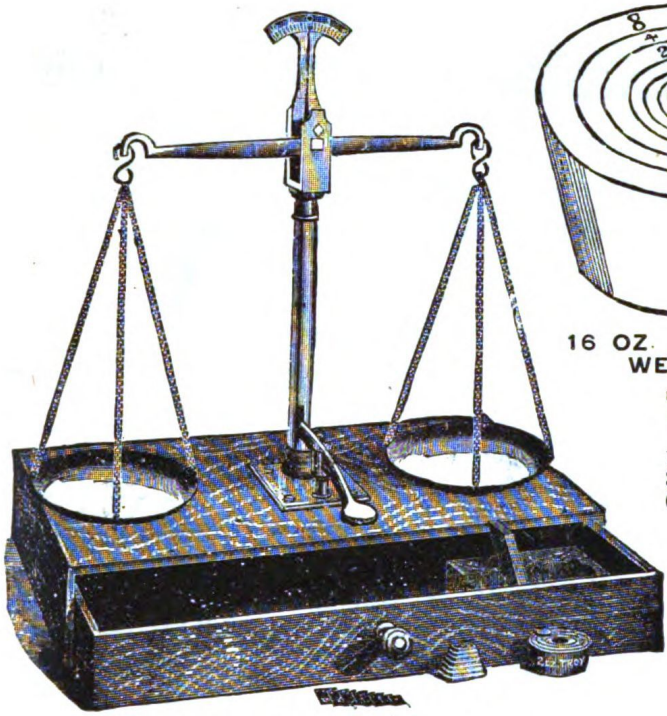
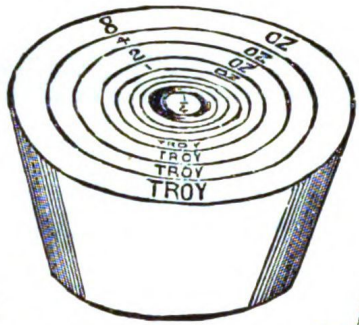
TOOLS S.

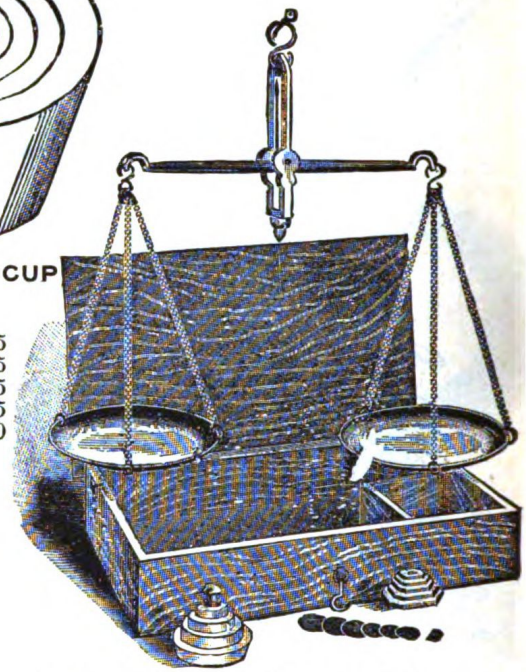




16 OZ. SCALE CUP WEIGHTS.

SET OF

4 oz.	$0 75
8 oz.	1 25
16 oz.	1 75
32 oz.	2 75
64 oz.	5 50



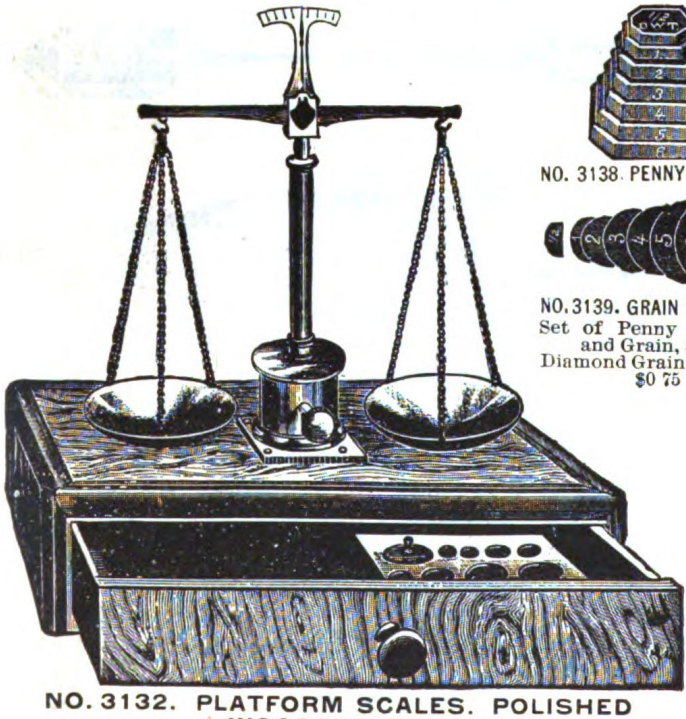
NO. 3137. PLATFORM SCALES.

Size,	2 oz.	4 oz.	6 oz.	8 oz.	16 oz.	32 oz.
Each,	$3 00	$4 00	$5 25	$6 00	$8 00	$10 00

For Troy weights, see page 223.

NO. 3134. AVERY SCALES IN BOX.

Size,	1 oz.	2 oz.	3 oz.	4 oz.	6 oz.	8 oz.
Each,	$1 00	$1 25	$1 50	$1 60	$1 85	$2 50



NO. 3138. PENNY WEIGHTS.

NO. 3139. GRAIN WEIGHTS.
Set of Penny Weights and Grain, $0 25
Diamond Grain Weights $0 75

NO. 3132. PLATFORM SCALES. POLISHED WOODEN CASE.

Size,	4 oz.	6 oz.	8 oz.	16 oz. large.
Each,	$5 25	$6 00	$7 00	$9 00

NO. 3133. POLISHED WOODEN CASE WITH MARBLE TOP.

Size,	4 oz.	6 oz.	8 oz.	16 oz.
Each,	$6 00	$7 00	$8 25	$11 00

DIAMOND WEIGHTS.

Price Per Set.

No. 4652.	1-kt.	down	$1 00
" 4653.	2-kt.	"	1 20
" 4654.	64-kt.	"	5 00

GUARANTEED.

POCKET DIAMOND SCALE.

This scale is a cheap, reliable hand scale, correct throughout and sensitive. The weights are made with knobs, easy to handle and correct (64 karats in all). The case is leather covered, lined with velvet, with a reliable bar lock.

No. 4655. Price..... $4 50

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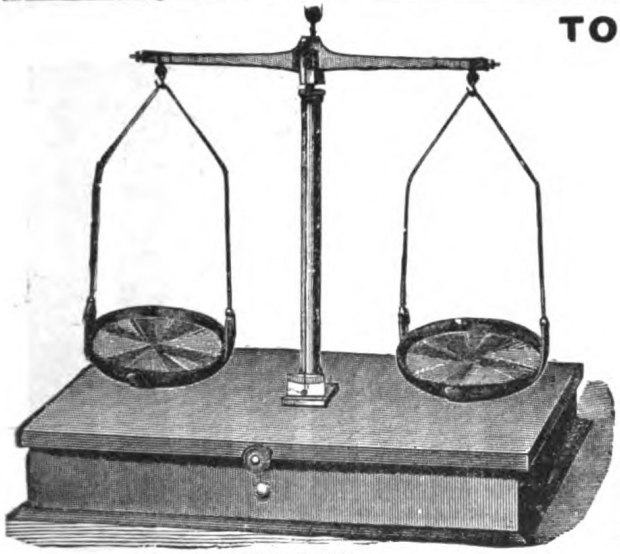
TOOLS S.



NO. 3140.

GOLD OR JEWELERS' SCALES.

All of brass, highly finished, of superb workmanship, and lacquered to prevent tarnishing. Movable pans, with improved lever for lifting, adjusting screws on end of beam. On polished walnut boxes, or in glass case with drawer.

No.	Diam. of pans.	Length of beam.	Capac. in each pan.	Length of box.	Price on box.	In glass case.
32	3½ in.	7 in.	8 oz.	12 in.	$10 00	$18 00
33	4 in.	8 in.	16 oz.	13½ in.	12 00	20 00
34	4½ in.	9 in.	30 oz.	15 in.	14 00	24 00
35	5½ in.	10 in.	50 oz.	17½ in.	16 00	28 00
36	7 in.	12 in.	64 oz.	20 in.	20 00	34 00
37	7½ in.	15 in.	75 oz.	24 in.	25 00	40 00
37a	10 in.	18 in.	100 oz.	28 in.	40 00	65 00

Prices do not include Weights.

NO. 3141.

COMMON GOLD SCALES.

Made Entirely of Brass, on Box with Drawer.

V. Pans, 3½ in. diam., 10 oz. capacity $8 00
W. Pans, 4½ in. diam., 25 oz. capacity..... 10 00
X. Pans, 6½ in. diam., 50 oz. capacity..... 14 00
Z. Pans, 8 in. diam., 75 oz. capacity..... 18 00

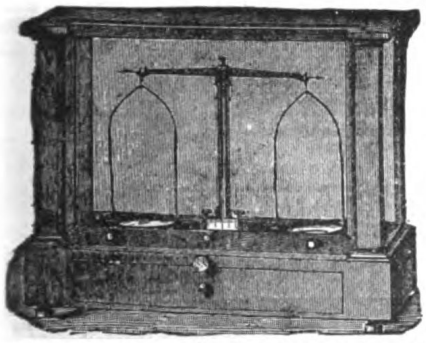
Prices do not include weights.
See No. 42, Troy Weights.

TROY WEIGHTS FOR SCALES.

In walnut blocks, accurately adjusted and finely finished, divided in ounces, dwts., and grains.

No.	Oz. piece down to grain.	In box.	In block.
42	1—¼	$3 50	$3 00
43	2—½	4 00	3 50
44	2—½	4 50	4 00
45	5—½	6 00	5 00
46	10—½	7 50	6 50
47	20—½	11 00	9 00
48	20—½	13 00	11 00
49	50—½	15 50	13 50
50	100—½	20 00	18 00
51	100—½	25 00	23 00
52	200—½	29 00	26 00
53	200—½	36 00	33 00
54	500—½	43 00	40 00

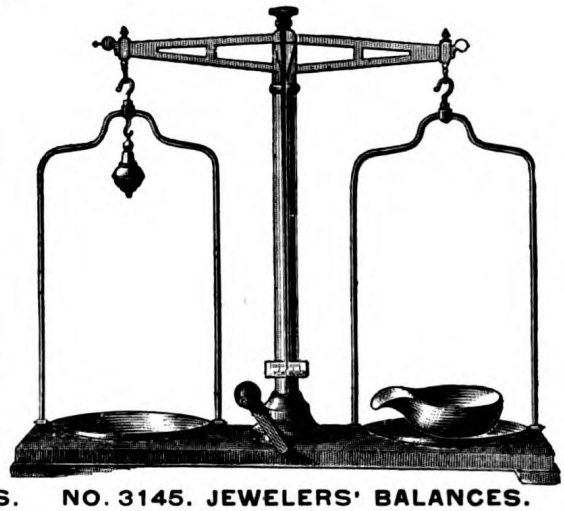
Dwts. to ¼ grain in paper box, per set, 50c. to 75c.



NO. 3143. DIAMOND SCALES.

Capacity 250 karats in each pan; sensitive to 1-500 karat with the full charge, in mahogany glass case, sliding front counterpoised, including set of weights from 100 karats down to 1-16, each weight fitted separately; screw, feet and level. Height 15 inches, length 16 inches. Each.... $30 00

No. 3144. Handsome small scale case, 12 in. long, 10 in. high, 5 in. broad; screw feet and level, including weights from 64 karats down. Each..... $25 00



NO. 3145. JEWELERS' BALANCES.

Balance is well adapted for weighing bars or loose matter; made entirely of brass, heavily lacquered. Give size wanted.

No. 3145. 24 in. beam, 12 in. pans, 200 oz. capacity..... $70 00
" 3146. 18 in. beam, 10 in. pans, 100 oz. capacity..... 50 00
" 3147. 16 in. beam, 9 in. pans, 50 oz. capacity 40 00

Prices do not include weights. See No. 42, Troy Weights.

NO. 3142.

DIAMOND SCALES.

Improved pocket upright diamond scale has drop lever by which it is raised and lowered, shows 5 full divisions for 64 to 1-64 weights; with full set of weights fitted separately.

Price..... $10 00
" Imported..... 9 00

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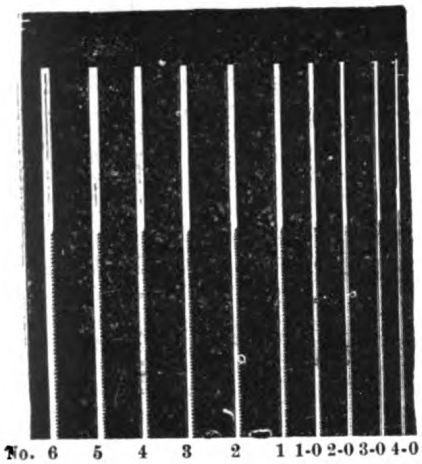
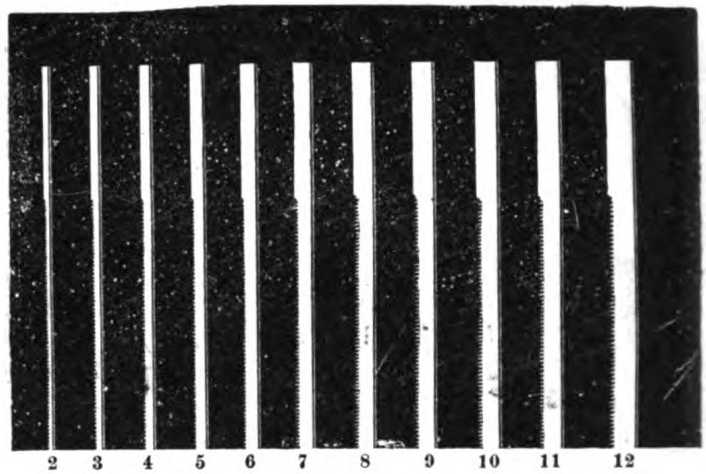
TOOLS S.



No. 6 5 4 3 2 1 1-0 2-0 3-0 4-0

NOTICE.

Saws come One Dozen in a bundle, and can not sell less than one bundle of a size.



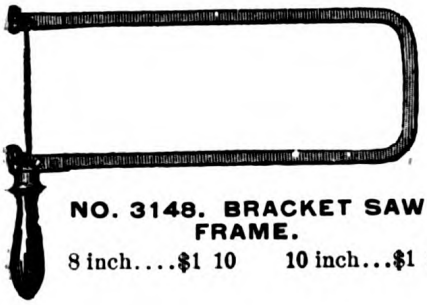
2 3 4 5 6 7 8 9 10 11 12

SQUARE SAWS.

	Doz.	Gross.	BEST. Doz.	BEST. Gross.
Square, 000 to 4....	$0 10	$0 75	$0 10	$1 00
" 5 to 6....	10	1 00	15	1 25
" 0000.....	15	1 25		

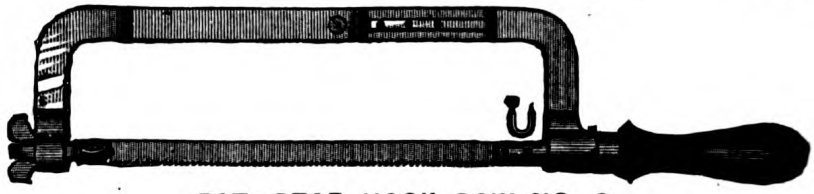
PLATE SAWS.

	Per Dozen	Per Gross
No. 2 to 6.....	$0 10	$1 00
No. 6 to 12.....	15	1 25



NO. 3148. BRACKET SAW FRAME.

8 inch....$1 10 10 inch...$1 25



PAT. STAR HACK SAW NO. 9.

This frame holds blades from 8 to 12 inches in length. It is an extension frame covered by a steel sheath. The sheath makes it very stiff, and at the same time very light. It is polished and nickel-plated. The blades may be faced in either direction. We sell this frame at the same price of the No. 3149 in our former Catalogue, and expect it will take the place of the old No., as it seems to be a great improvement on these.

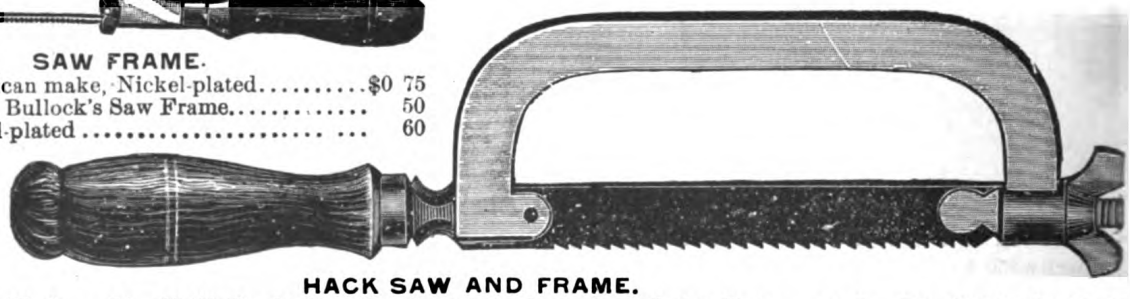
No. 4658. Price..... $1 00

AMERICAN HACK SAW BLADES
FOR ABOVE FRAME.

No. 4659.	6 inch.....	per doz.	$0 55	No. 4662.	7 inch.....	per doz.	$0 60
No. 4660.	8 "	"	65	No. 4663.	9 "	"	70
No. 4661.	10 "	"	85	No. 4664.	12 "	"	1 00
No. 3274.	Assorted, 6 to 9 inches....					"	0 65

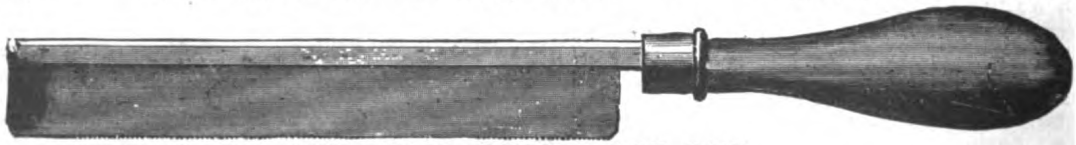
SAW FRAME.

No. 3155. American make, Nickel-plated.....$0 75
" 3156. O. W. Bullock's Saw Frame..... 50
" 3157. Nickel-plated 60



HACK SAW AND FRAME.

No. 3151.	German Blade....	5 in.	$0 90	6 in.	$1 00	7 in.	$1 25	No. 3153.	Saw Blades, Stubs....	each,	4 in.	$0 12	5 in. $0 18
No. 3152.	Stubs, "	5 in.	1 25	6 in.	1 50	7 in.	1 75	No. 3154.	" "	ea. 6 in.	$0 20	7 in.	0 25 8 in. 0 30



NO. 3166. BRASS BACK SAW.

Price.....each, $0 25

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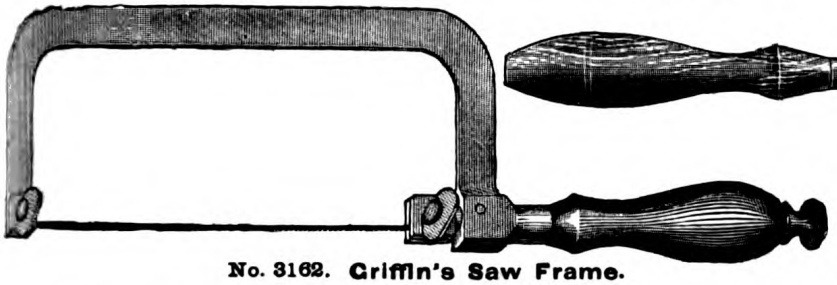
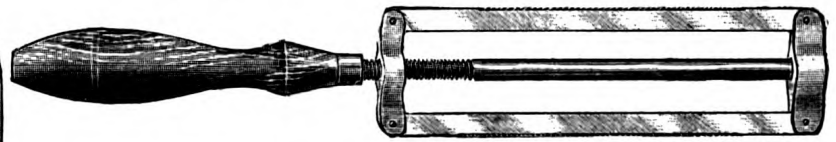


No. 3162. Griffin's Saw Frame.

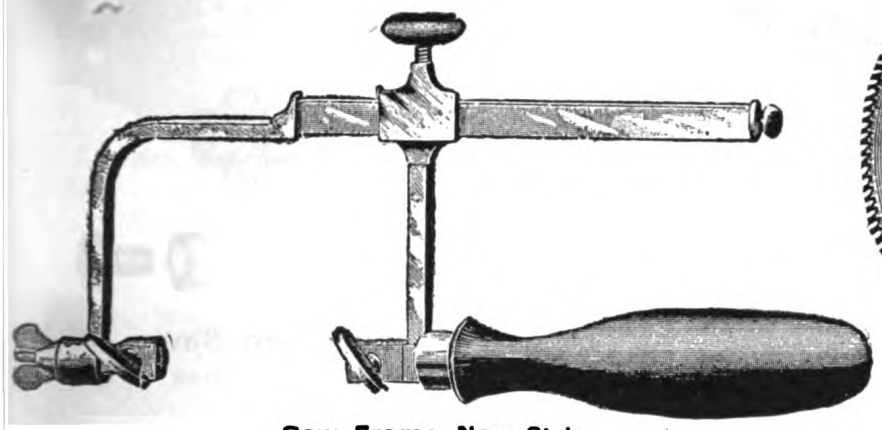
Frame all in one piece of steel, ebony handle, with screw on end of handle to tighten saw. Including 1 dozen saws.....$0 75



NO. 4666. Jeweler's Hack Saw.

(Made in 5-inch size only.) These Saws are No. 25 gauge thickness and have fine cut teeth. For cutting tubing or other work where teeth of the ordinary saw blades do not stand, these saws will be found superior.

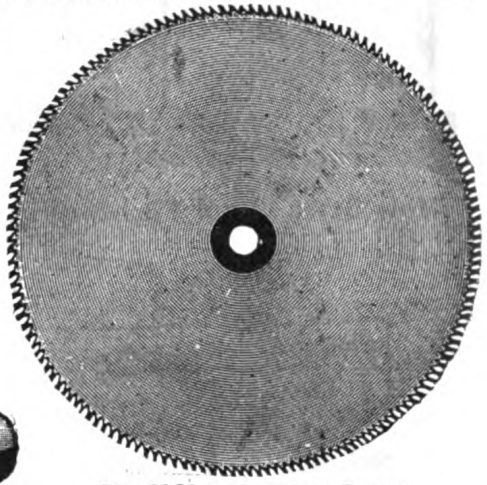
Price of frame with 1 doz. saws.....$0 85
Price of saw blades, per doz..... 60



Saw Frame—New Style.

No. 3163. With screw to tighten slack.....each, $0 55
" 3164. Extra quality..... " 75
" 3165. " " nickel-plated..... " 1 20

Nickle-plated $0 90

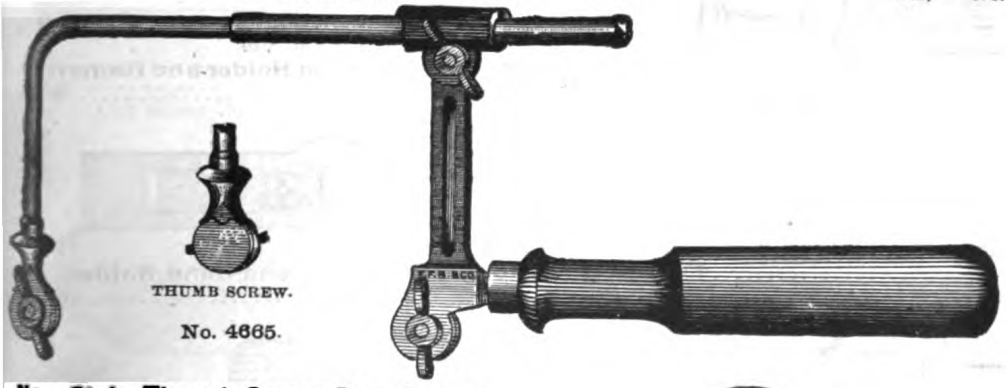


No. 3169. Circular Saws.

Best Quality.

Size,	¾ in.	1⅛ in.	1⅜ in.	1½ in.	1¾ in.	2 in.
Ea.,	15c.	18c.	20c.	25c.	30c.	30c.

Size,	2 3-16 in.	2⅜ in.	2½ in.	2¾ in.	3 in.	3½ in.
Ea.,	35c.	40c.	40c.	45c.	50c.	50c.



THUMB SCREW.

No. 4665.

New Style Thumb Screw Saw Frame.

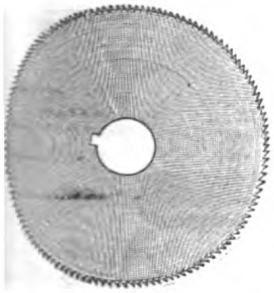
Nickel-plated.....each, $0 85

No. 3171.

Thumb Screws.

For Saw Frames.

Price.....each, $0 10

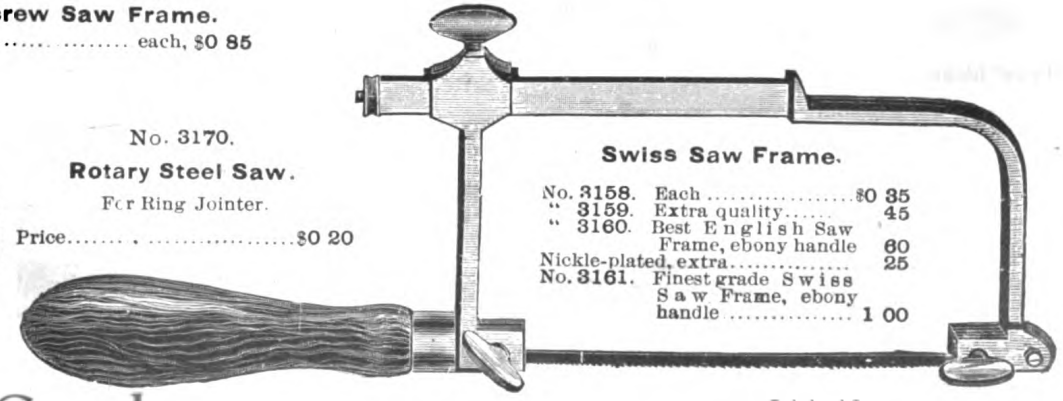


No. 3170.

Rotary Steel Saw.

For Ring Jointer.

Price.....$0 20



Swiss Saw Frame.

No. 3158. Each.....$0 35
" 3159. Extra quality..... 45
" 3160. Best English Saw Frame, ebony handle 60
Nickle-plated, extra..... 25
No. 3161. Finest grade Swiss Saw Frame, ebony handle..... 1 00

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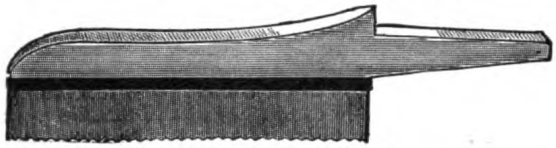
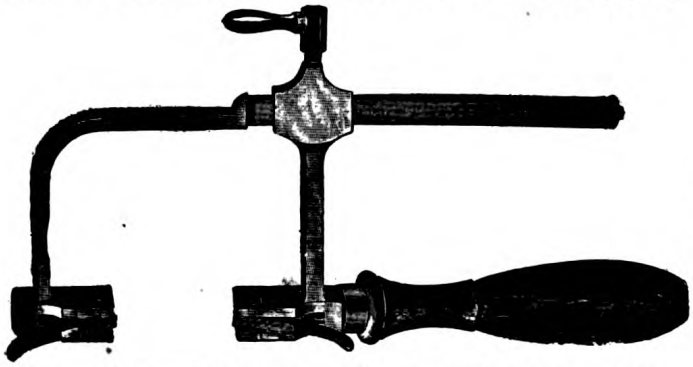


No. 3168. Brass Back Saw.

Price $0 20



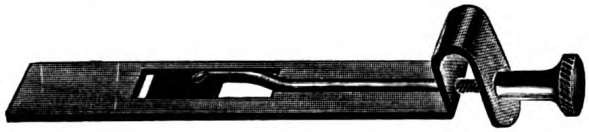
New Style Lever Tightening Saw Frame.

No. 4667. Plain $0 60
" 4668. Nickel-plated 75

Cut is Full size.

No. 3172. Second-Hand Holder.

Price ..... each, $0 25
" nickel-plated ..... " 35

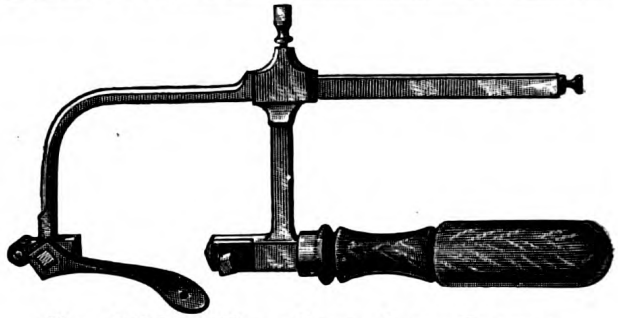


No. 3299. New Improved Second-Hand Holder.

Price $0 35

No. 3174. Schwerter's Patent Second-Hand Holder.

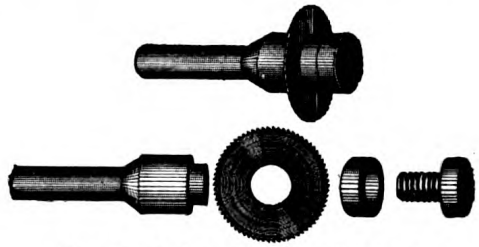
Price, brass $0 50
" nickel-plated 75



No. 4669. New Style Saw Frame.

The wrench is a novel feature with saw frames. Will allow you to clamp the saw much tighter than with thumb-screw. To obtain a good hold, it is often necessary to draw screw tight with pliers. This not alone often hurts the latter, but surely the former.

Price ..... each, $0 75



Saw Arbor and Saws.

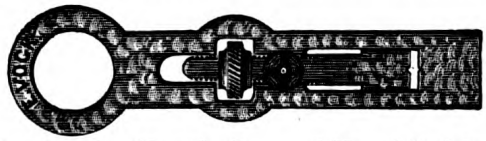
Fit into No. 38 Wire Chuck.

No. 3167. Saw Arbor and 1 Saw $0 50
Saws only ..... per doz., 25

Cut is Full Size.

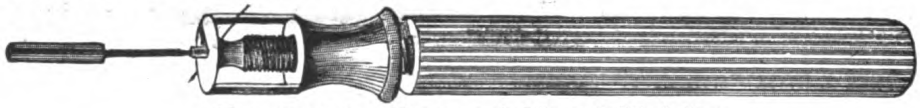
No. 3173. Second-Hand Holder and Remover.

Price, nickel-plated $0 25



No. 4670. Vock's Second-Hand Holder.

Price $0 25



No. 3144. Second-Hand Holder.

Price, nickel-plated ..... each, $0 70

No. 3195. Bush's Patent Second-Hand Holder.

Price ..... each, $0 25 | Nickel-plated ..... each, $ 0 40

No. 3196. New Second-Hand Holder.

Price, wood handle ..... each, $0 30 | Nickel-plated ..... each, $0 40

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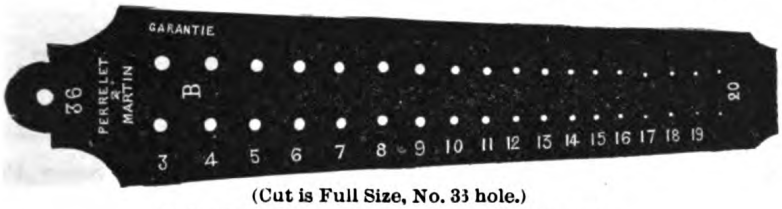
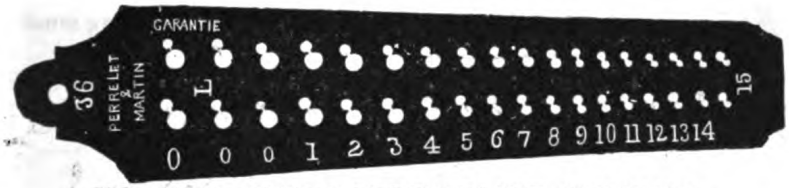


(Cut is Full Size, No. 33 hole.)

NO. 3175. SWISS SCREW-PLATE.

20 hole	each,	$0 40	28 hole	each,	$0 56	36 hole	each,	$0 72
22 "	"	44	30 "	"	60	40 "	"	80
24 "	"	48	32 "	"	64	48 "	"	96
26 "	"	52	34 "	"	68	60 "	"	1 20

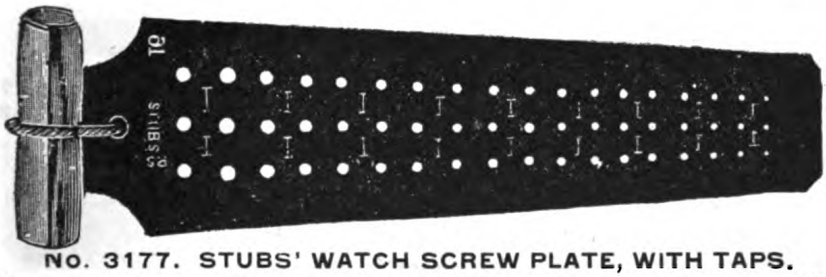
Nickel-plating, extra, 15c and 20c.



NO. 3176. SWISS SCREW PLATE, NOTCHED.

18 holes	each,	$0 45	30 holes	each,	$0 75	42 holes	each,	$1 05
24 "	"	60	36 "	"	90	48 "	"	1 20
						60 "	"	1 50

Nickel-plating, extra, 20c.

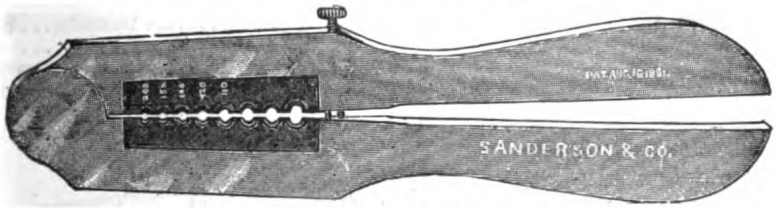


NO. 3177. STUBS' WATCH SCREW PLATE, WITH TAPS.

Sizes	5th.	6th.	7th.	10th.
Price ..... each,	$0 75	$1 00	$1 25	$2 00

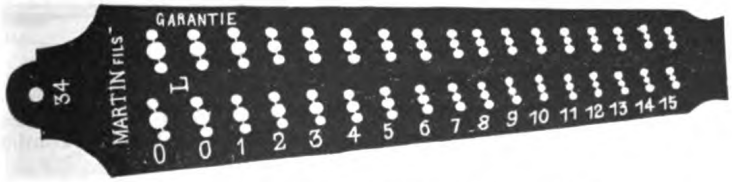
Cut shows 10th size. Every line between notch denotes a line.

Nickel-plating, extra, $0 20.



NO. 3178. SANDERSON'S LIGHTNING SCREW PLATES.

No. 4.	Screw Plate ..... each,	$1 00
	Nickel-plated ..... "	1 25



NO. 3179. NOTCHED SCREW PLATE.

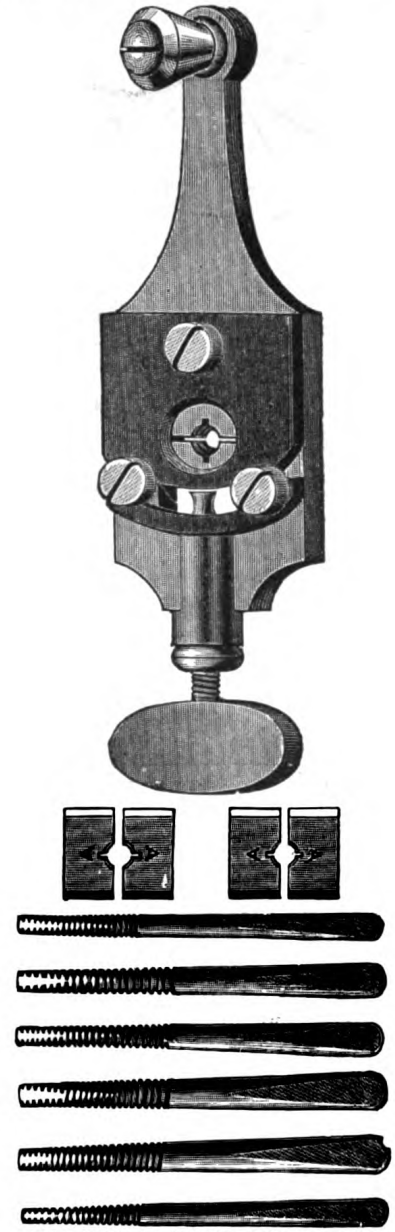
24 holes	each,	$0 72	36 holes	each,	$1 08	60 holes	each,	$1 80
30 "	"	90	48 "	"	1 44			

NO. 3180. SCREW PLATES FOR LEFT THREAD.

20 holes ..... each,		$0 50
Nickel-plated	"	65
30 holes	"	75
Nickel-plated	"	90
36 holes	"	90
Nickel-plated	"	1 10

NO. 3181. NOTCHED SCREW PLATES FOR LEFT THREAD.

20 holes ..... each,		$0 70
Nickel-plated	"	90
36 holes	"	1 25
Nickel-plated	"	1 45



SCREW STOCK AND DIES.

(New Style, with 6 taps.)

No. 3182.	Price	$1 75
" 3183.	Nickel-plated	2 00

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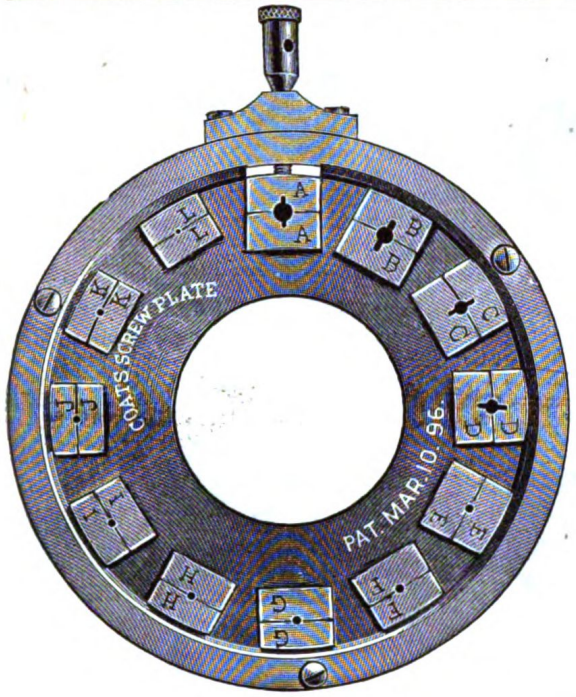


No. 3189. COAT'S SCREW PLATE.

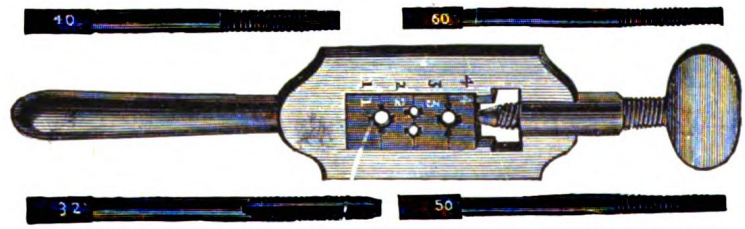
PATENT.

Cut to left shows the exact size of an adjustable Screw Plate. The center plate which holds the dies is made to revolve inside the outer ring, the die you wish to use being brought immediately under the knurled screw. The same die can be used to make screws for the movements of the different watch companies, as we find the pitch to be the same, although the diameters vary, but as each die is adjustable, taps or screws can be cut with precision. Each Plate has full directions accompanying same.

Price, complete, Nickel-plated..... $3 00
" " " Morocco Case 3 50
" Extra Dies, per pair..... 25

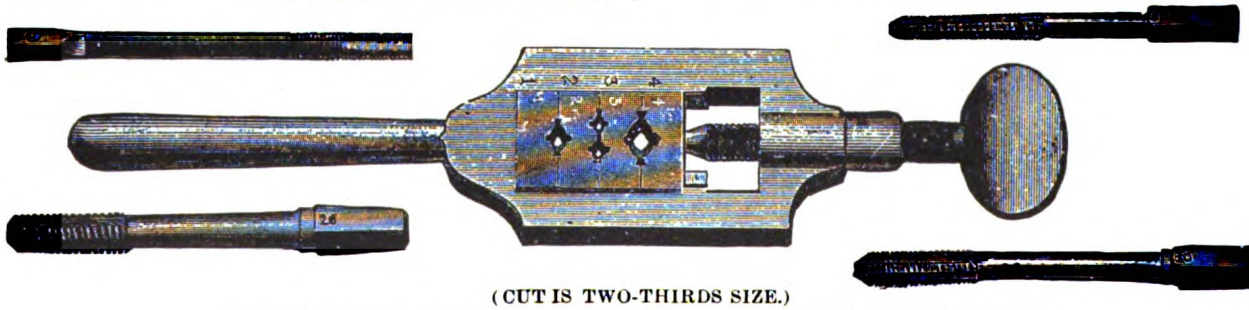
NO. 3184. ADJUSTABLE SCREW STOCK AND DIES.

No. 0. Screw Stock, Adjustable, 4 holes without Taps.....each, $1 50 Nickel-plated..... $1 75
" 0. " " " 4 " with " ..... " 2 00 " " 2 25



NO. 3185. ADJUSTABLE SCREW STOCK, 3 HOLES.

No. 1. 3 Holes and Taps.....$1 75 | No 2. 4 Holes and Taps.....$1 90
" 1. 3 " " " Nickel-plated..... 2 20 | " 2. 4 " " " Nickel-plated..... 2 35



(CUT IS TWO-THIRDS SIZE.)

NO. 3188. ADJUSTABLE SCREW STOCK AND DIES, 4 HOLES.

No. 3186. Screw Stock and Dies, 3 Holes and Taps, large, each, $2 00. No. 3187. Nickel-plated.....each, $2 35

No. 3187. Die Stock, 3 Taps and 3 Dies, comes in following combinations: 24, 32, and 36; 26, 30 and 34; diameter of Taps for Nos. 24 and 26 is ¼ inch; for 30 and 32, $\frac{3}{16}$ inch; for 34 and 36, $\frac{5}{32}$ inch. Have also same Stock in combinations Nos. 28, 34, and 40; diameter of Taps, ¼, $\frac{3}{16}$ and ⅛ inch.

No. 3188. 4 Holes and Taps, large.....$2 25 | Nickel-plated.....each, $2 60

No. 3188. Die Stocks, 4 Taps, 4 Holes and 3 Dies, comes in following combinations: 24, 32, 36, and 40; 26, 30, 34, and 40; diameter of Taps for Nos. 24 and 26 is ¼ inch; Nos. 30 and 32, $\frac{3}{16}$; Nos. 34 and 36, $\frac{5}{32}$ inch; and No. 40, ⅛ inch. Have also same Stock in combinations 28, 34, 40, and 50; diameter of Taps, ¼, $\frac{3}{16}$, ⅛, and $\frac{7}{64}$ inch.

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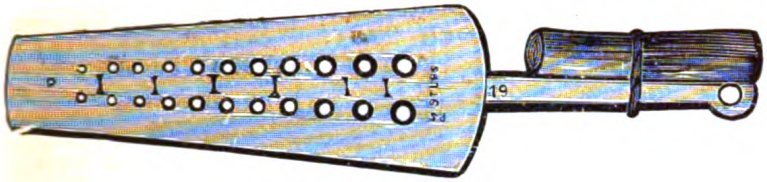
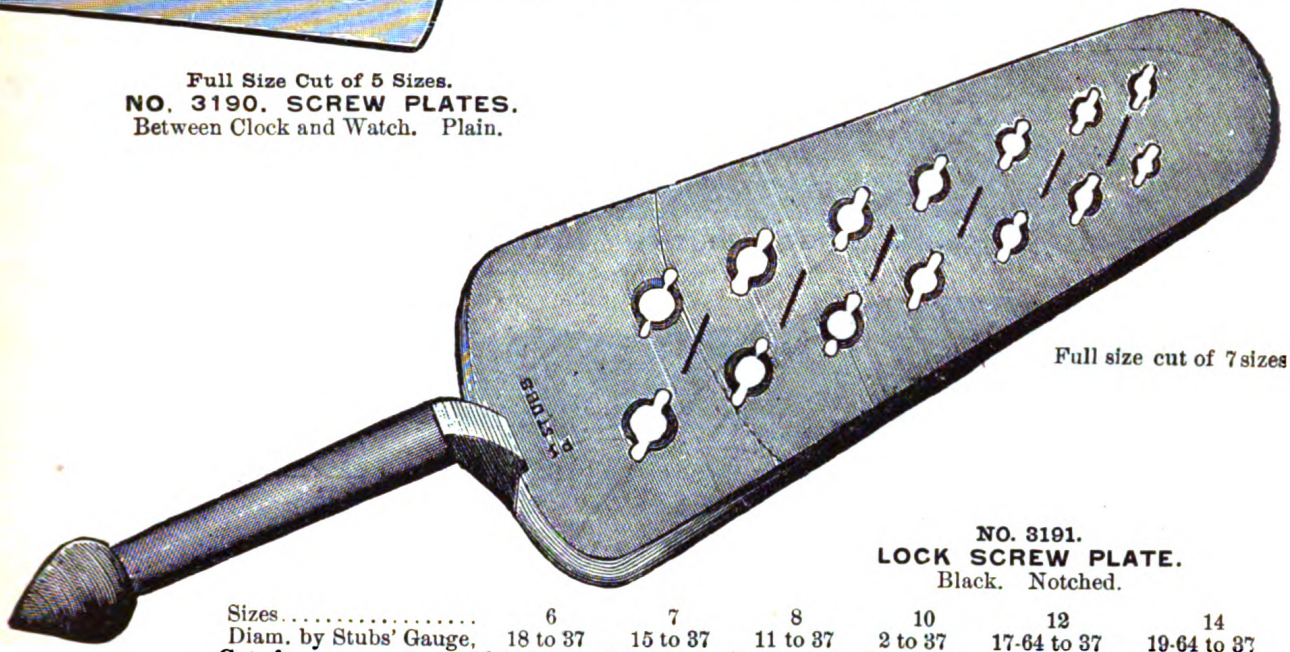


Sizes,	5	6	7	8	10	12
Holes,	19	23	25	27	35	53
Price each,	$0 75	$1 00	$1 25	$1 50	$2 00	$2 50
Nickel-plated, extra						25

Full Size Cut of 5 Sizes.

NO. 3190. SCREW PLATES.
Between Clock and Watch. Plain.

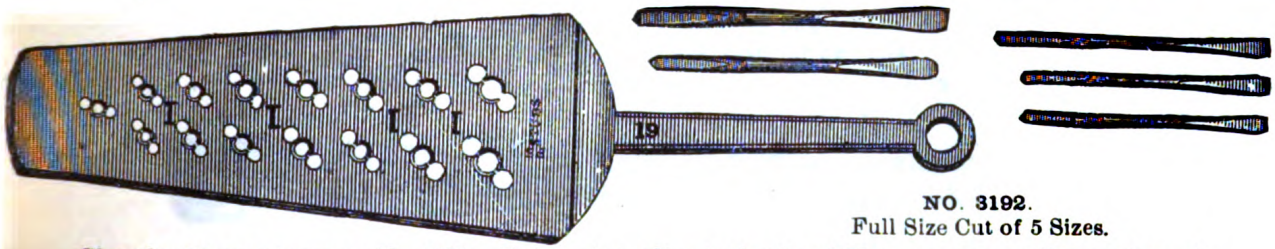


Full size cut of 7 sizes

NO. 3191.
LOCK SCREW PLATE.
Black. Notched.

Sizes	6	7	8	10	12	14
Diam. by Stubs' Gauge,	18 to 37	15 to 37	11 to 37	2 to 37	17-64 to 37	19-64 to 37
Cuts from	13-64 to 1-8	7-32 to 1-8	15-64 to 1-8	1-4 to 1-8	5-16 to 1-8	3-8 to 1-8
Price, each,	$1 50	$1 84	$2 17	$2 84	$3 75	$4 92

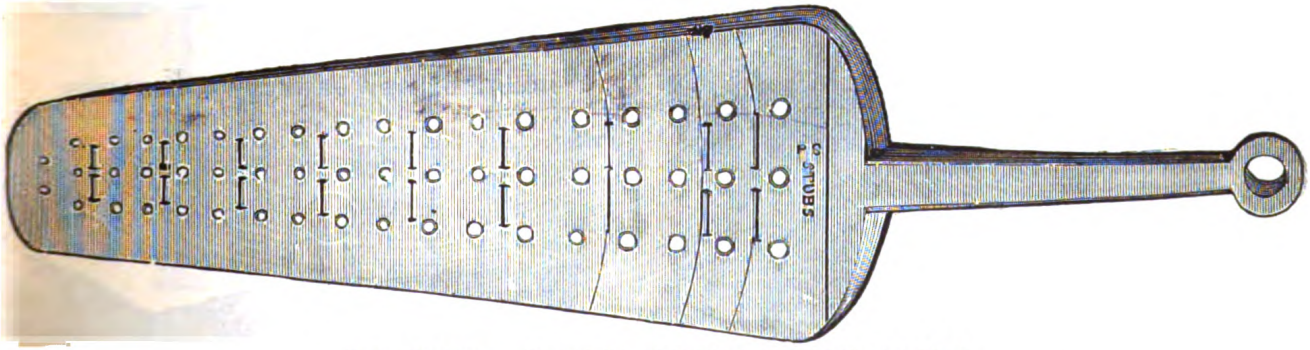
According to the size, a corresponding number of Taps accompany each Plate.



NO. 3192.
Full Size Cut of 5 Sizes.

Size of cutting part same as No. 3190. Plain. According to the size of Plate, a corresponding number of Taps accompany each Plate, as per Cuts.

Sizes	5	6	7	8	10	12
Price, each,	$1 38	$1 75	$2 13	$2 50	$3 25	$4 00



NO. 3193. STUBS' WATCH SCREW PLATE.

Sizes	5	6	7	8	10
Diameter of hole by Stubs' Gauge	55 to 65	53 to 64	53 to 67	50 to 67	45 to 68
Cuts from	1-16 to 3-32	5-64 to 32	5-64 to 1-32	3-32 to 1-32	7-64 to 1-32
Price each,	$0 75	$1 00	$1 25	$1 50	$2 00

According to the size, a corresponding number of Taps accompany each Plate. The above plates are Bright.

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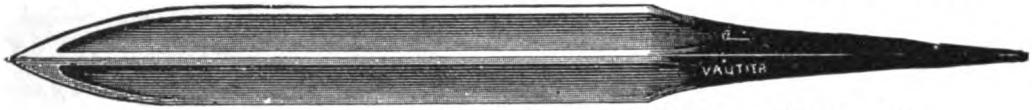
TOOLS S.

NO. 3197. HOLLOW "VAUTIER" SCRAPER "A."

Price..... $0 25 | With Handle..... $0 30

NO. 3198. "NICOUD" SCRAPER "B."

Price..... $0 25 | With Handle..... $0 30



NO. 3199. LARGE "VAUTIER" HOLLOW SCRAPER "C."

Price..... $0 50

Full si·e of One and one-half inches.

NO. 3200. STEEL TAPER SCRAPER.

Price, each, 1½ inch Blade..... $0 25 | 2 inch Blade..... $0 30 | 2½ inch Blade..... $0 35
" " 3 " " ..... 35 | 4 " " ..... 40 |

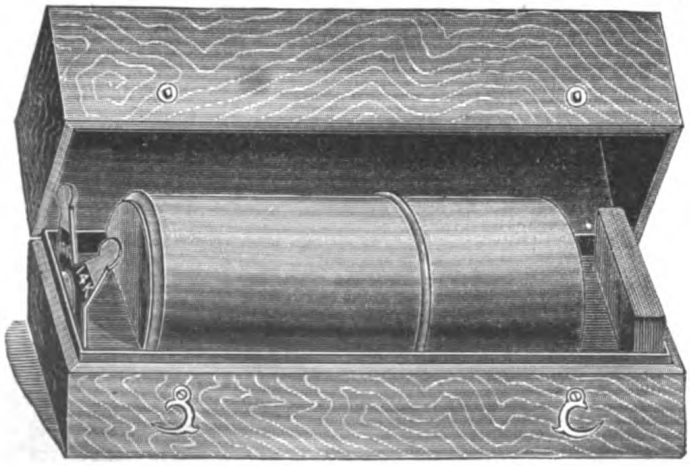
Full size of One and one-half inch.

NO. 3201. BLUNT STEEL SCRAPERS.

Price, each, 1½ inch Blade..... $0 25 | 2 inch Blade..... $0 30 | 2½ inch Blade..... $0 35
" " 3 " " ..... 35 | 4 " " ..... 40 |

NO. 3202. ENGLISH SCRAPERS.

Rosewood and Ebony Handles, each, $0 50 and $0 75, according to size.



NO. 3204. GOLD TESTING SET.

The regular American Testing Needles are now used in the above set instead of the star, as illustrated.

Price.....each, $3 75

NO. 3210. NEW JEWELER'S SCRAPER.

Price.....$0 40

LINEN POLISHING THREAD.

No. 3211. 36 Skeins to pound, per lb.,.....$1 25
Per skein..... 0 10

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TOOLS S and T.

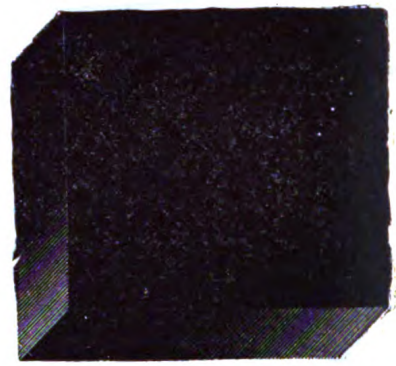
No. 3203.
GOLD TEST NEEDLE.

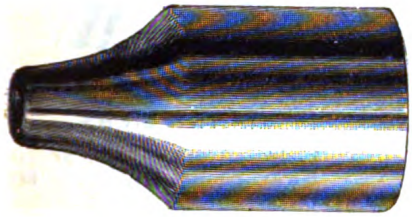
4 to 20 Karat,
Best.....per set
$2 00

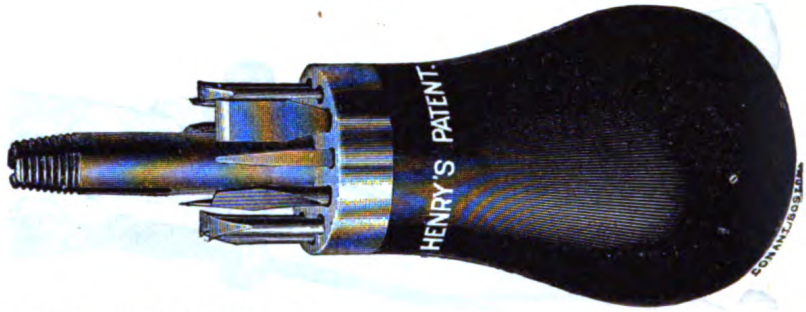
No. 3207.
GOLD TEST STONES.

Small,	each	$0 25
Medium	"	0 35
Large	"	0 50

Gold stones vary as to quality and sizes.



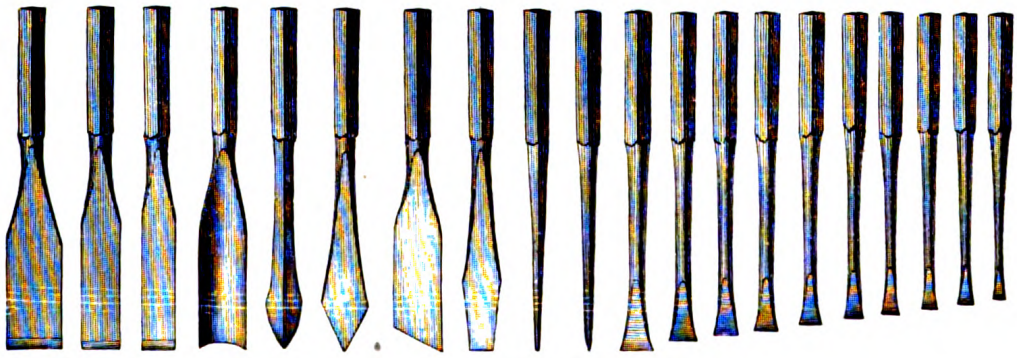




No. 3209. HENRY TOOL SET.

Is the only Tool Set that carries the tool in same end of holder in which they are used. Solid handle that can be used with a mallet.

Price.....$0 75



No. 4671. TOOL HOLDER.

The jaws will hold not only the tools contained in the hollow handle but all other things from a needle to a mill-file. No other Tool Handle in the market will do this. It also answers the purpose of a hand-vise.

The tools are made from steel of the highest grade, tempered by men of great experience, honed to a fine cutting edge, and are all highly finished. They are made for service and will give the greatest satisfaction. The Jaws in the handle shut over the shoulders of the tools (as seen in the cuts) so as to make it impossible to pull them out when in use.

Price, with 20 tools.....$1 00

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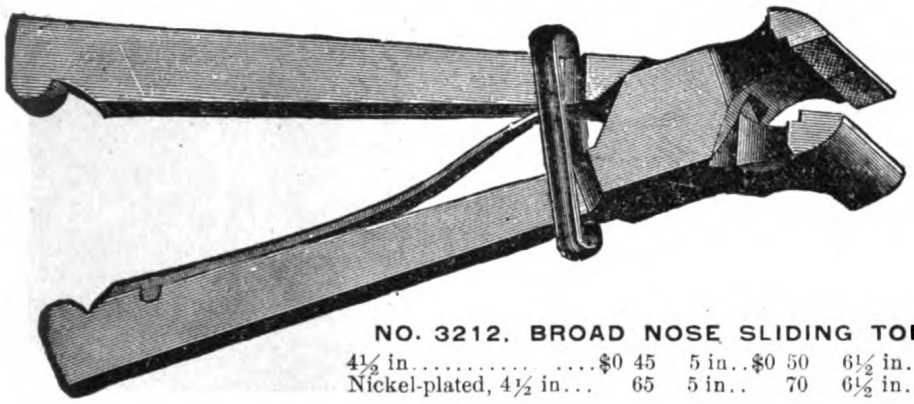
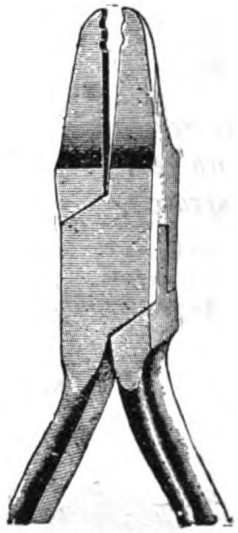
TOOLS T.



NO. 3212. BROAD NOSE SLIDING TONG.

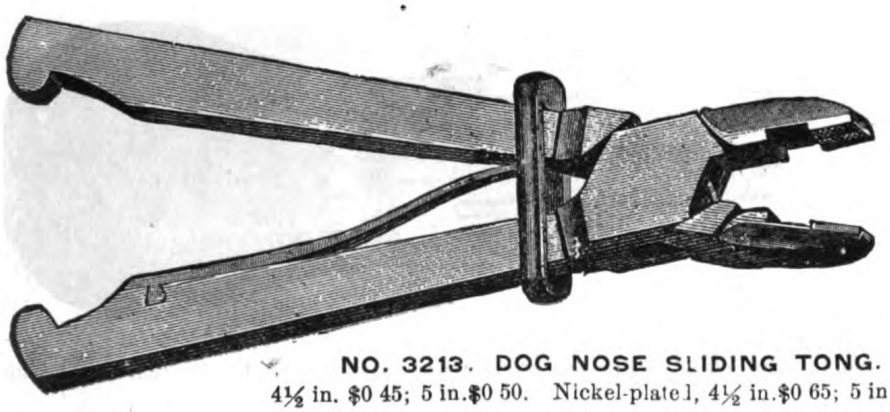
4½ in.....	$0 45	5 in..	$0 50	6½ in..	$0 85
Nickel-plated, 4½ in...	65	5 in..	70	6½ in..	1 05



NO. 3214.

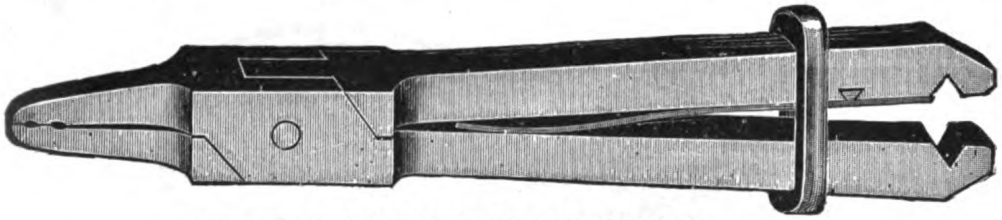
TWO-HOLE WATCH HAND PLIERS.

Plain.....$0 40
Nickel plated..... 60



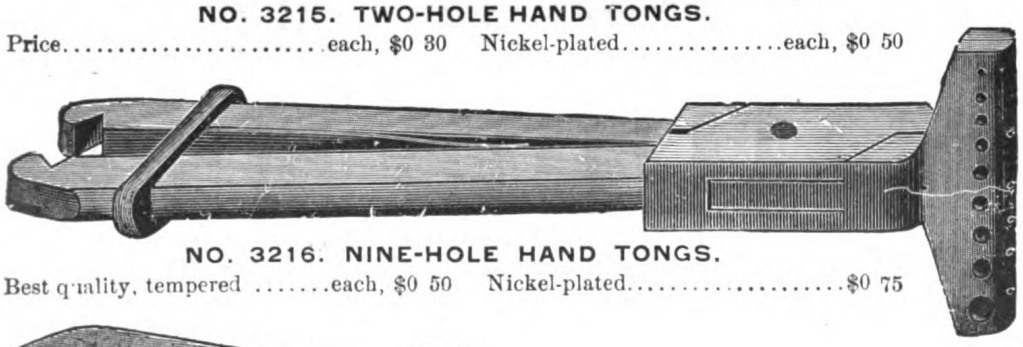
NO. 3213. DOG NOSE SLIDING TONG.

4½ in. $0 45; 5 in. $0 50. Nickel-plated, 4½ in. $0 65; 5 in $0 70



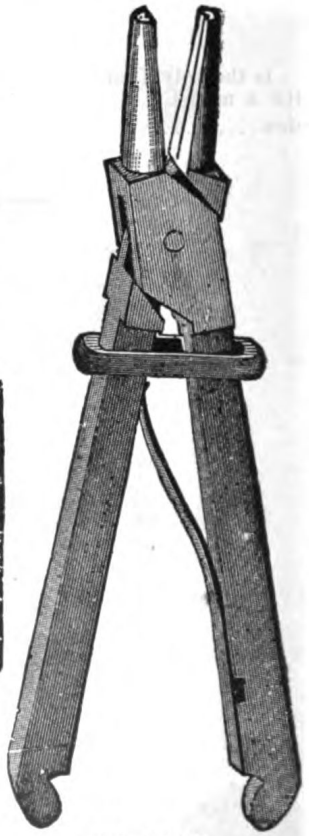
NO. 3215. TWO-HOLE HAND TONGS.

Price.....each, $0 30 Nickel-plated.....each, $0 50



NO. 3216. NINE-HOLE HAND TONGS.

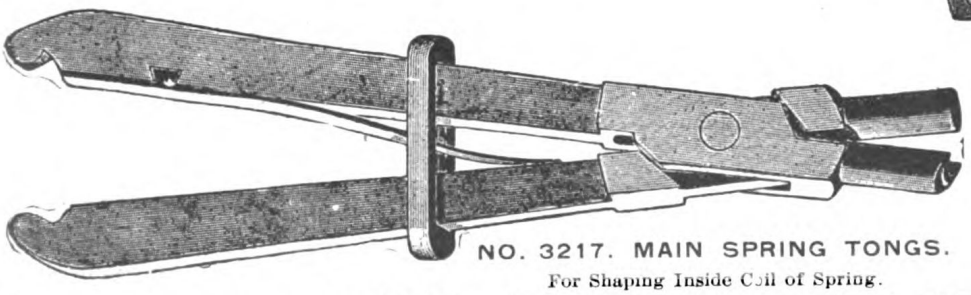
Best quality, tempered .....each, $0 50 Nickel-plated.....$0 75



NO. 3219.

ROUND NOSE SLIDING TONG.

4½ in.....$0 40
5 in..... 50
Nickel-plating extra.. 20



NO. 3217. MAIN SPRING TONGS.

For Shaping Inside Coil of Spring.

Price.....each, $0 65 Nickel-plated.....each, $0 90

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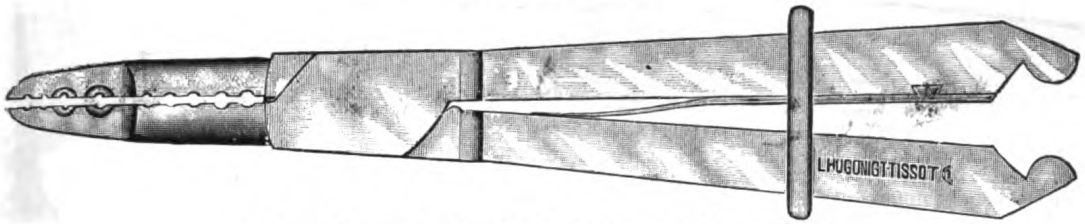
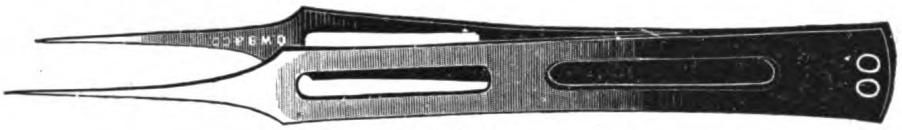


NO. 3218. NEW NINE-HOLE HAND TONG.

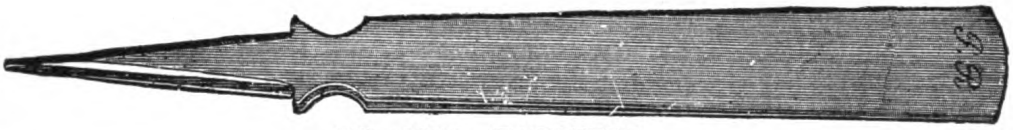
Nickel-plated.....each, $0 75



Full Size.

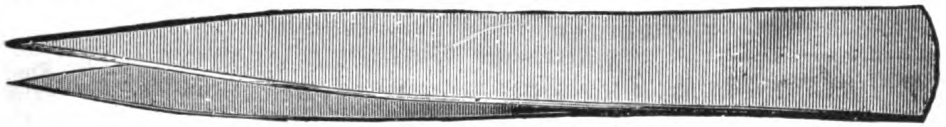
NO. 3220. SKELETON SLIM POINTED TWEEZERS.

Nickel-plated.....each, $0 20



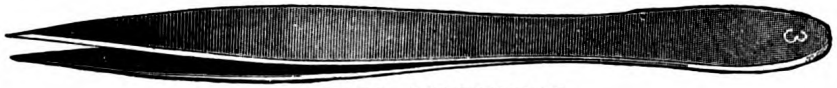
NO. 3221. TWEEZERS.

Fine tempered Point.....each, $0 25 Nickel-plated.....each, $0 25



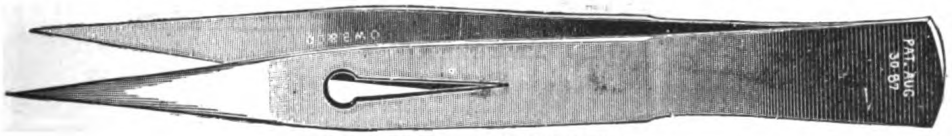
NO. 3222. TWEEZERS. "FACON HUNTSMAN, 4½"

Very fine.....each, $0 35 Nickel-plated.....each, $0 35



NO. 3223. TWEEZERS.

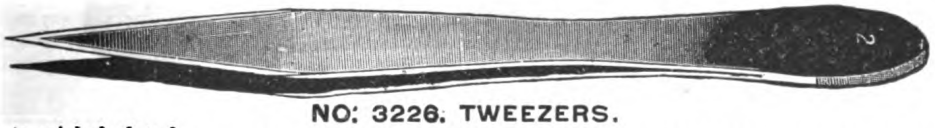
Fine tempered points.....each, $0 15 Nickel-plated.....$0 20



NO. 3224. TWEEZERS.

For holding Watch Hands to Broach where the Slot is at Center of Tweezers.

No. 3224. Plain.....each, $0 25 No. 3225. Best quality P. R. style, nickel-plated.....$0 30



NO. 3226. TWEEZERS.

Fine tempered points, nickel-plated..... each, $0 25

NO. 3227. P. R. TWEEZERS.

No. 3227 Fine tempered points, nickel-plated...each, $0 25 No. 3228. Extra fine quality, nickel-plated.....each, $0 35

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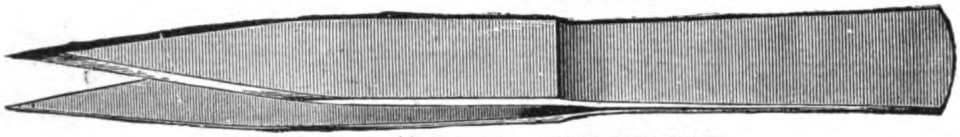
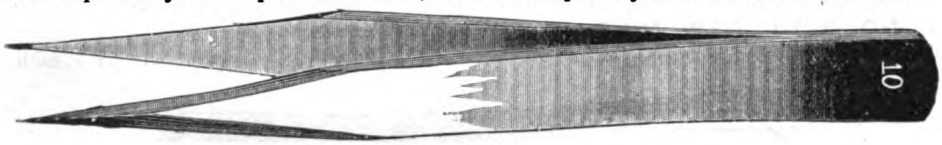
TOOLS T.



TWEEZER "FACON JEANNERET."

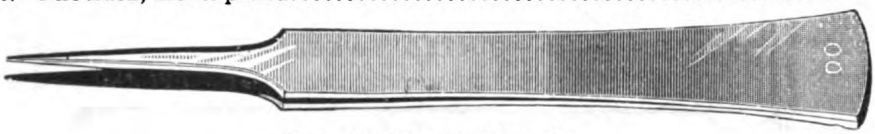
No. 3229. Price.....each, $0 25
Extra quality..... " 30

For superiority of fine point and touch, we would especially recommend this Tweezer.



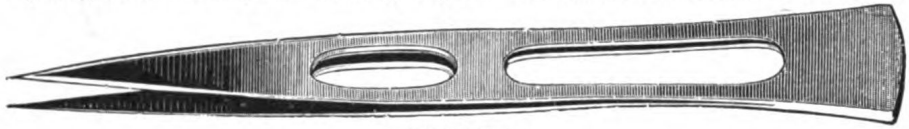
TWEEZER.

No. 3230. Fine tempered points, nickel-plated.....each, $0 30
" 3231. File Back, nickel-plated..... " 40



NO. 3232. TWEEZER.

Fine tempered points, nickel-plated, extra quality.....each, $0 20



TWEEZER.

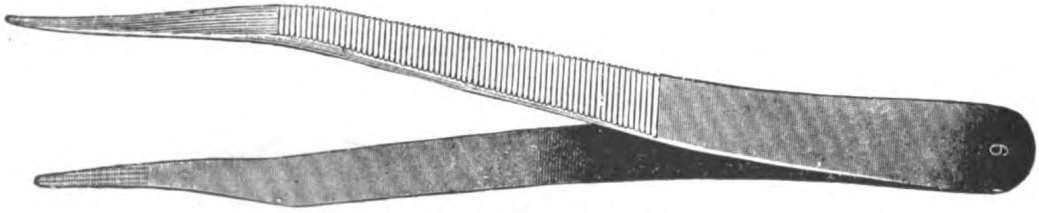
No. 3233. Nickel-plated.....each, $0 20
Extra quality..... " 25

NO. 3234. JEWEL HOLDING AND SETTING TWEEZER.

Price.....each, $0 40

NO. 3235. DIAMOND TWEEZERS.

Easy spring, tempered points, nickel-plated, price.....each, $0 75



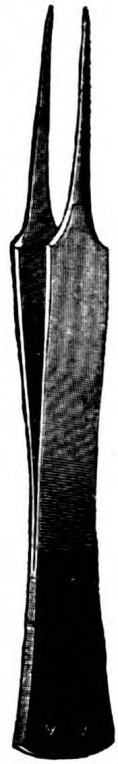
DIAMOND TWEEZERS.

No. 3236. Extra fine, nickel-plated.....each, $1 00
" 3237. 2d quality, cheaper finish..... " 75

Cut two-thirds size.

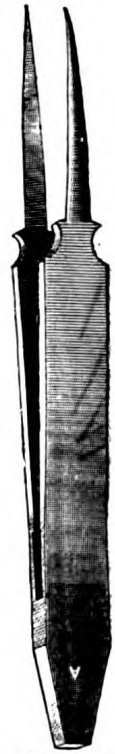
NO. 3238. DIAMOND TWEEZER WITH SHOVEL.

Extra fine quality and finish, nickel-plated,.....each, $1 20



NO. 3239. TWEEZER.

Fine tempered points, extra quality, nickel-plated ....each, $0 20
Plain..... " 15



NO. 3240. TWEEZER.

Nickel-plated, extra quality.....$0 20
2d quality, plain, 15

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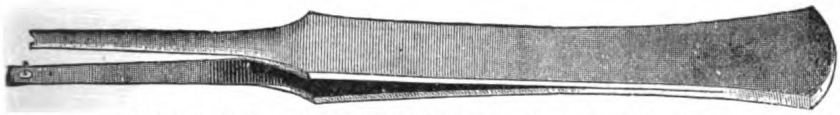
TOOLS T.

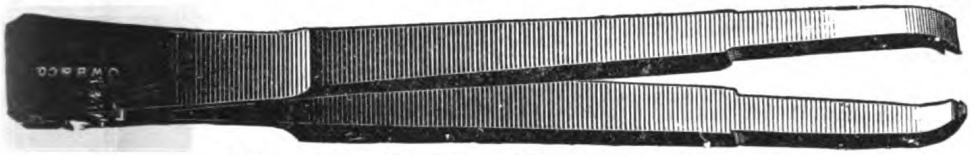
NO. 3241. NEW STYLE BENT TWEEZERS.

Nickel-plated, extra quality.... .....each, $0 30



NO. 3242. HAIRSPRING STUD TWEEZERS.

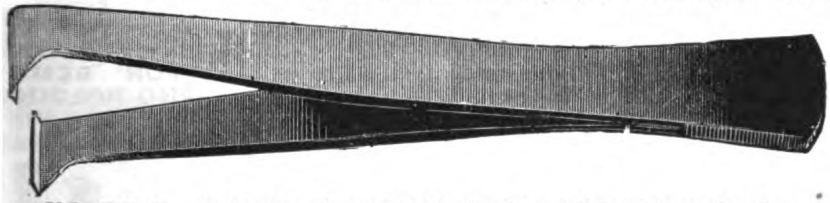
Price, Nickel-plated..... .....each, $0 30



NO. 3243. CUTTING PLIER TWEEZERS.

Nickel-plated.....each, $0 40 | Plain .....each, $0 35

A very handy tool for removing hands pulling out rivets, or cutting thin wire.



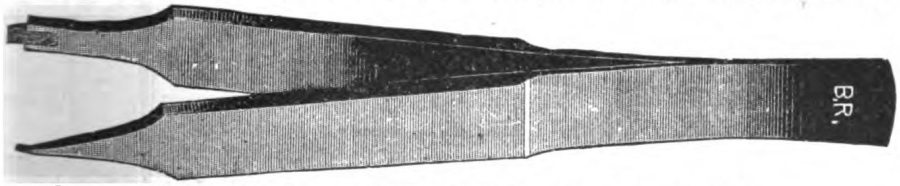
NO. 3244. NICKEL-PLATED WATCH HAND TWEEZERS.

For removing Watch Hands, Nickel-plated, extra quality.....each, $0 35

NO. 3245. HOLLOW TWEEZERS.

Price, extra quality ....each, $0 30

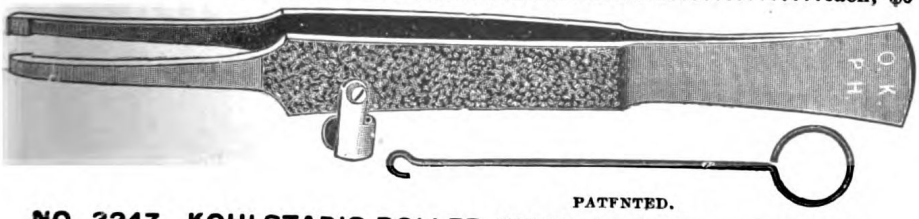
To produce a very light but strong Tweezers, the blades are stamped hollow.



NO. 3246. BRIDGE REMOVING TWEEZERS.

The upper or flat pointed side is made of brass, finely polished and soft, so as to prevent scratching or defacing the bridge, while the under point is bent to fit hole in under side of bridge and prevent slipping.

Nickel-plated.....each, $0 45



PATENTED.

NO. 3247. KOHLSTAD'S ROLLER JEWEL SETTING TWEEZERS.

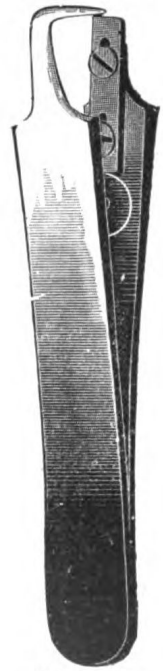
Simplicity, quick work, and saving of Jewels, no slipping of Jewels. Price, each, $0 75

Directions with each Tweezer.

NO. 3248.

CUTTING TWEEZERS.

Knurled Back....each, $0 50



NO. 3249.

STUD REMOVER.

The lower dip of the Remover slides back and forth, controlled by a light spring, and adjusts itself to any size of stud.

Price.....each, $0 45

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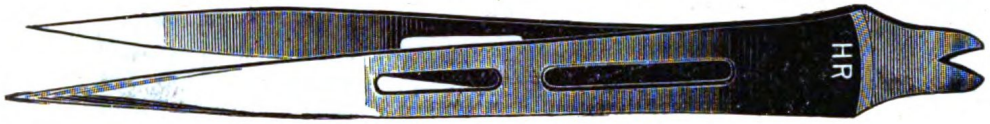
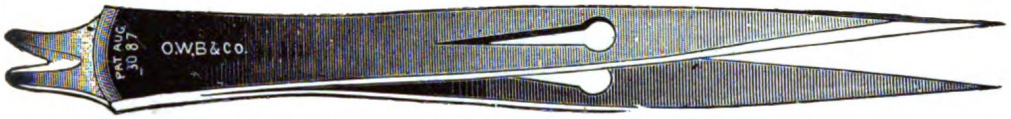
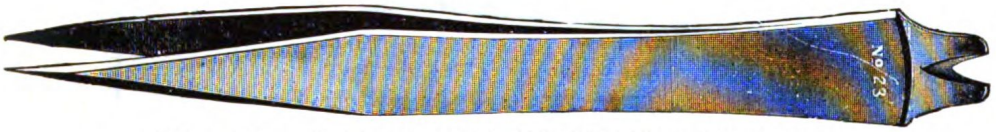
TOOLS T.



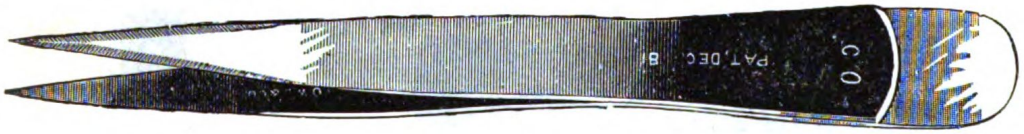
NO. 3250. SKELETON HAND REMOVING TWEEZER.
Price.....each, $0 30



NO. 3251. HAND REMOVING TWEEZERS.
With slot for holding hands while fitting them. Holds all sizes and kinds.
Price, nickel-plated.....each, $0 45



NO. 3252. H. R. HAND REMOVER AND TWEEZER.
Patented, H. R., nickel-plated, price.....each, $0 30



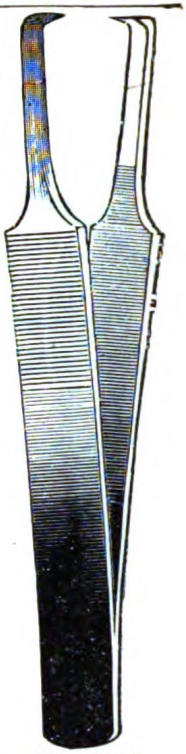
NO. 3253. PATENT CASE OPENER AND TWEEZERS.
Price.....each, $0 35

SANDERSON'S NEW FINE SKELETON TWEEZER.
No. 3254. Non-Magnetic, nickel-plated.....each, $0 30
" 3255. Steel, nickel-plated..... " 30

NO. 3256. NON-MAGNETIC P. R. PATTERN.
Price, nickel-plated.....each, $0 30

NO. 3257. LOGAN'S NON-MAGNETIC TWEEZER.
Price.....each, $0 35

NO. 3258. HAIR SPRING SHAPER.
Price, nickel-plated.....each, $0 30



NO. 3259.
FOR REMOVING AND HOLDING PAT. CENTER PINIONS.
Nickel-plated each, $0 40

For Removing Hair Spring Collets.
No. 3260. Nickel-plated.....each, $0 30
No. 3261 Extra quality, N. P. each, 40

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TOOLS T.

NO. 3262.

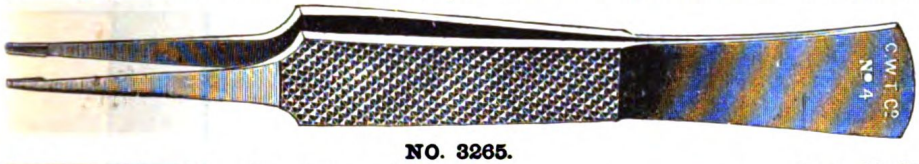
Nickel plated.....each, $0 40

NO. 3263.

Nickel plated.....each, $0 40

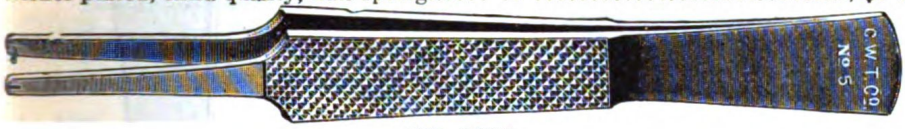
NO. 3264.

Nickel plated.....each, $0 45



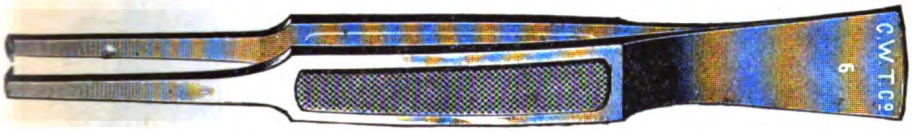
NO. 3265.

Nickel plated, extra quality, hair spring.....each, $0 45



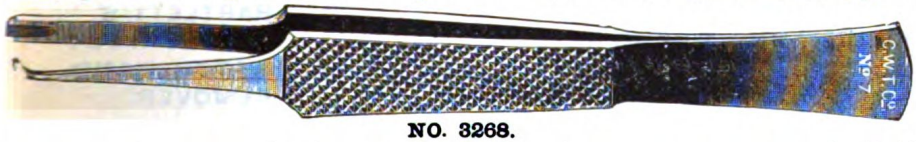
NO. 3266.

Nickel plated, extra quality, hair spring stud.....each, $0 45



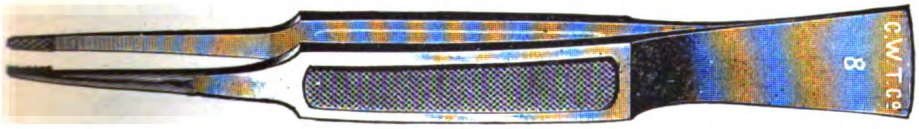
NO. 3267.

Nickel plated, extra quality, hair spring collet.....each, $0 45



NO. 3268.

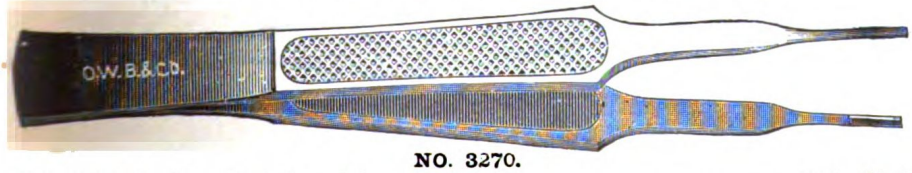
Nickel plated, extra quality, for removing watch bridges.....each, $0 50



NO. 3269.

Nickel plated.....each, $0 45

STEEL TWEEZERS, NICKEL-PLATED.



NO. 3270.

Nickel plated, fine points, knurled.....each, $0 40

HAIR SPRING SHAVER.

LONG POINTED TWEEZER.

No. 3271. 6 inches long.....$0 25
" 3272. 7 " 30
" 3273. 8 " 35
Nickel plated, extra, 10c.

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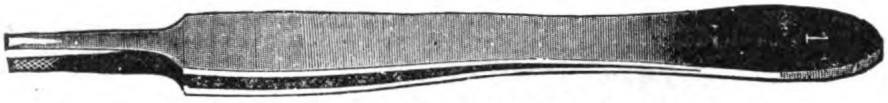
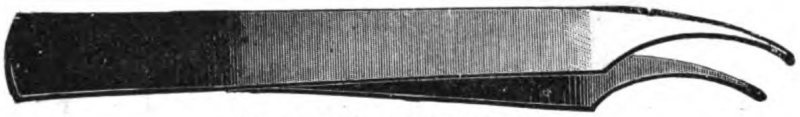
TOOLS T.



NO. 3274. FLAT FACE TWEEZERS.

Price.....each, $0 20 Nickel-plated.....each, $0 25



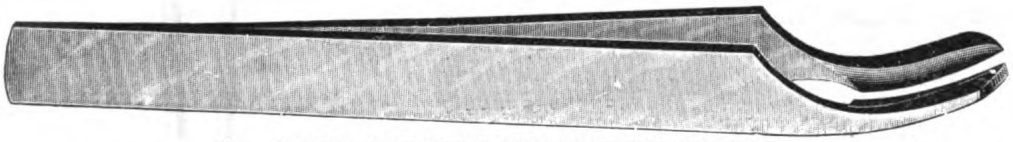
NO. 3275. TWEEZERS.

For removing Hair Spring from Balance Wheel.

Nickel-plated.....each, $0 50

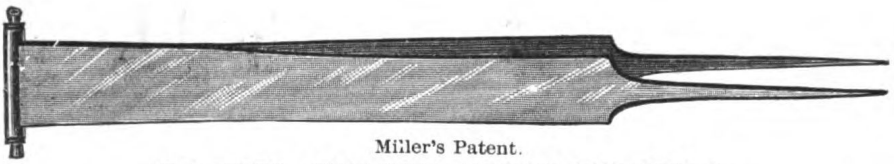
NO. 4672. JEWEL HOLDING TWEEZERS.

For cleaning Jewels, etc., the same tweezers will hold various sizes. A very practical tool.
Price, Nickel-plated.....each, $0 50



NO. 3277. BOLEY'S COLLET TWEEZERS

Nickel-plated.....each, $0 55



Miller's Patent.

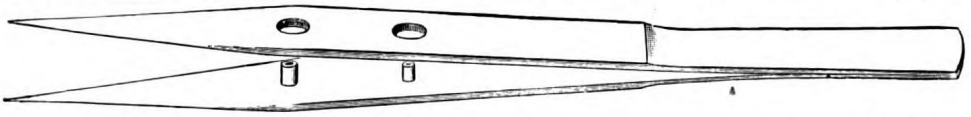
NO. 3278. MILLER'S HANDY TWEEZERS.

The attachment to these tweezers you will find handy for removing cock and foot jewels, by pressing them out with the small end, and pressing them back with the larger end. You may further use it to press on roller plates, hair springs, second and minute hands, etc. The slot on the sides answers to hold second hands while broaching.
Price.....each, $0 50

NO. 3281.

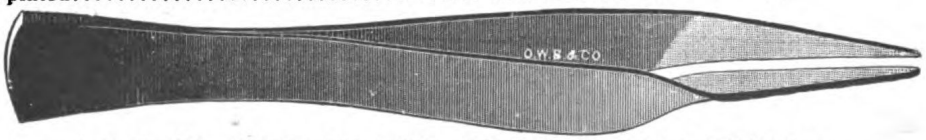
BARTLETT'S NEW PERFECT WATCH HAND REMOVER.

Nickel-plated....each, $0 60



GOLDEN LATHE JEWEL EXTRACTING AND REPLACING TWEEZERS.

No. 4673. Price, plain.....each, $0 50
No. 4674. Nickel-plated..... " 75



NO. 3280. HAND OR HAIR SPRING COLLET REMOVER.

Entirely New.

Nickel-plated.....each, $0 40

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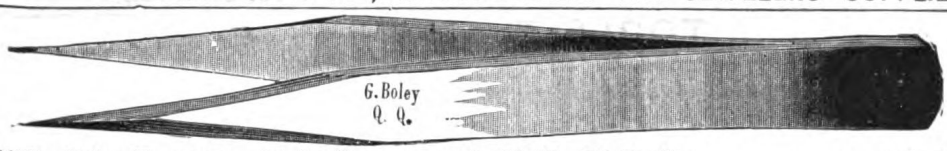
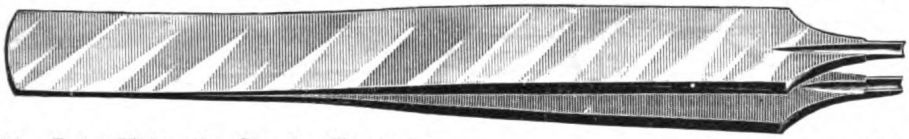
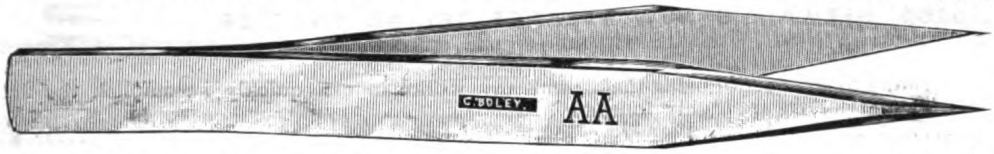


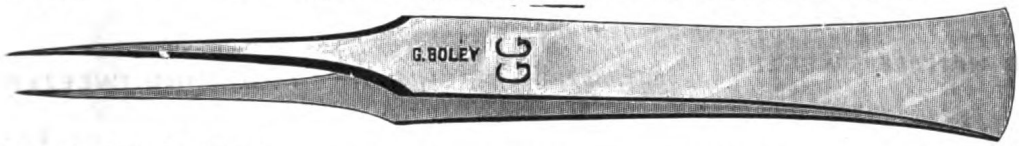
No. 4675. Boley Tweezers. 1st Quality .....each, $0 25 2d Quality.....each, $0 20



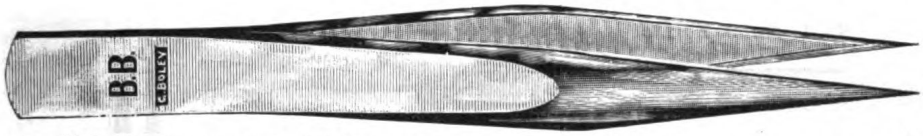
No. 4676. Boley Hairspring Shaping Tweezers.....each, $0 50



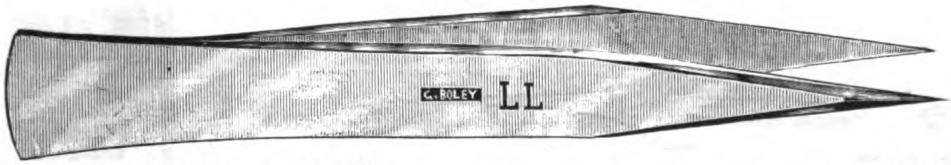
No. 4677. Boley Tweezers. 1st Quality.....each, $0 35
" 4778. " " 2d " ..... " 25



No. 4679. Boley Tweezers.....each, $0 35



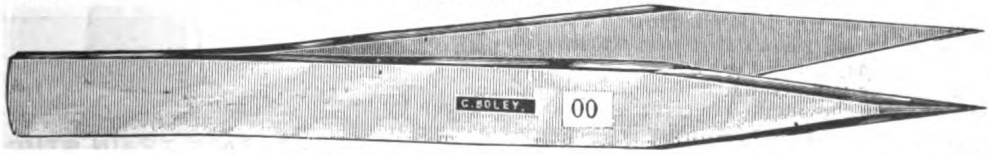
No. 4680. Boley Tweezers 1st Quality.....each, $0 35
" 4681. " " 2d " ..... " 25



No. 4682. Boley Tweezers. 1st Quality.....each, $0 35
" 4683. " " 2d " ..... " 25

No. 4684. Boley Tweezers. 1st Quality.....each, $0 40
" 4685. " " 2d " ..... " 30

No. 4686. Boley Tweezers. 1st Quality.....each, $0 35
" 4687. " " 2d " ..... " 25



No. 4688. Boley Tweezers, not plated. 1st Quality.....each, $0 25
" " " " 2d " ..... " 20

Cases of Neat's Leather for Tweezers.

No. 4690. 2¾ in. long..per doz., $1 50
Each.... 15
No. 4691. 3¼ in. long..per doz., 2 00
Each..... 20

No. 4689. Double End Steel Tweezers.

Price, nickel-plated, each.....$0 40

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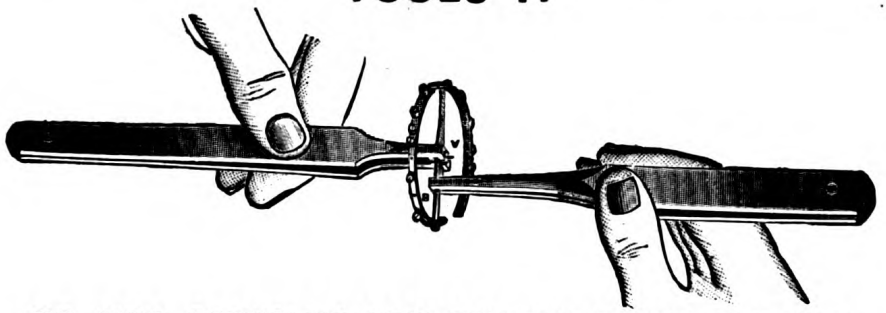
TOOLS T.



NO. 3282. SEEWALD'S NEW BALANCE TRUING TWEEZER.

The only tools on the market by which a watch maker without especial experience can properly true an Expansion Balance.

The accompanying illustration shows the manner of using them, and any workman can quickly accomplish the act of truing such balances perfectly. These tweezers are highly finished.

Two pairs, Nickel-plated..... $1 25

NO. 3289.

BIRCH SHORT WOOD HANDLE TWEEZER.

No. 3289. Handle same as on our No. 1938 Key.
" 3290. " " " " " " 1931 "
3½ inches long. Price..... ...each, $0 35

Cut is full size.

NO. 3288. BIRCH'S SELF-ADJUSTING TWEEZER.

For Pocket Use.

Price..... .....each, $0 25

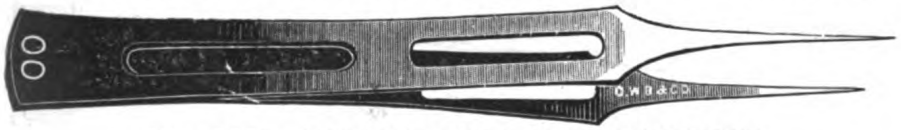
No. 3283. No. 1, Thick Points.

No. 3284. No. 2, Thin Points.

BIRCH'S SELF-ADJUSTING TWEEZERS.

Jaws made from the best quality of steel. Very convenient for picking up small articles, drills, pins, rivets, pinions, wheels and all kinds of clock and watch materials.

Price, nickel-plated.....each, $0 45



NO. 3285. LOGAN'S END SHAKER TWEEZER.

Price..... each, $0 30

Cut is Full Size.

NO. 3287. DELANEY'S COMBINATION TWEEZERS.

The crease in point of tweezer the watch maker will readily see renders it very useful for many different operations in watch repairing.

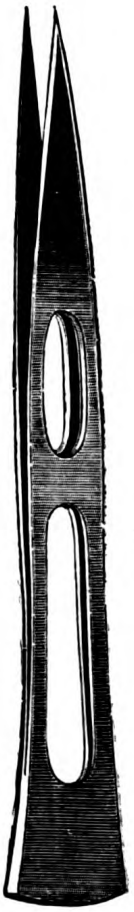
The lugs on the side have two pins directly under them which serve as a table on which to lay a second hand, then gripping the tweezer with the hand which closes the tweezer and holds sufficiently tight while broaching the boss of second hand. Sometimes the second hand may fly around, but in such cases the broach is over-worked. A broach does not do good work by driving too fast or even mill away as rapidly.

On the opposite side is another set of lugs which do not show in cut which are used as light nippers or for removing second hand when staked on a watch. The jaw is so constructed that simply closing tweezer pops off second hand.

A GREAT ADVANTAGE.

Place the pinion of any watch wheel in the point of tweezer and revolve wheel by the hand after the eye glass has been adjusted to the eye and it is a very easy matter to examine every tooth and leaf of wheel and pinion or detect any foreign matter that might have lodged therein.

Price..... $0 50



NO. 3286.

LOGAN'S TRAIN STUD TWEEZER.

Price..... .....each, $0 30

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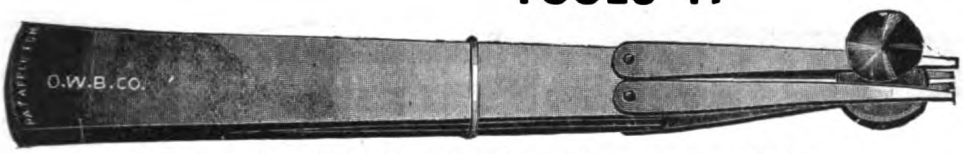
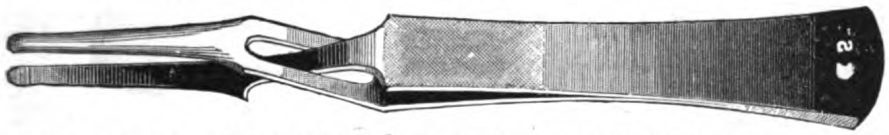
TOOLS T.



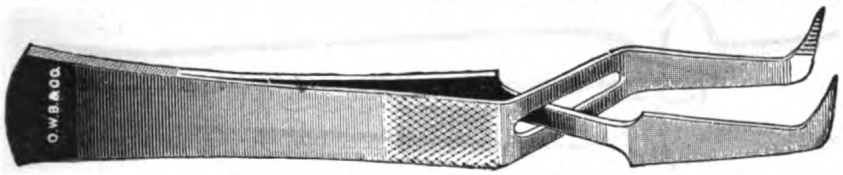
No. 4693. NEW SOLDERING TWEEZER.

Price.....each, $0 35



No. 4694. SELF-HOLDING STONE OR DIAMOND TWEEZERS.

Price.....each, $0 90



No. 4695. SELF-HOLDING STONE-SETTERS TWEEZERS.

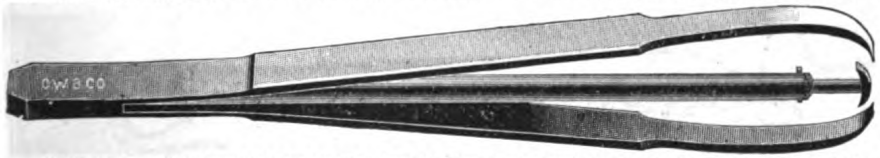
Price.....each, $0 90

CUT FULL SIZE.

No. 4696. PATENT DIAMOND TWEEZERS.

For Holding, Displaying and Matching Diamonds and other Precious Stones.

Price, Black Rubber Handle.....each, $1 50



No. 4699. NEW STYLE HAND REMOVING TWEEZERS.

The most simple and best Hand Remover in the market. With this remover you cannot lose the hand when taking it off the movement.

Price.....each, $0 75

No. 4698. DENTAL TWEEZERS, NICKEL-PLATED.

Price, Small .....each. $0 50 Large.....each, $0 75

CUT ⅔ SIZE.

No. 4700. TRACING NEEDLE.

Price .....each, $0 25

No. 4701. STEEL TRACING NEEDLE OR MARKER.

Price, Nickel-plated.....each, $0 25

No. 4697.
New Style Spring Tweezers.

Price, Ebony Handles .....each, $1 50

No. 4697½.
Short, all Nickel-plated.

Price $1 25

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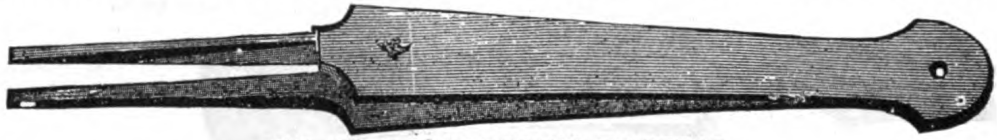
TOOLS T.

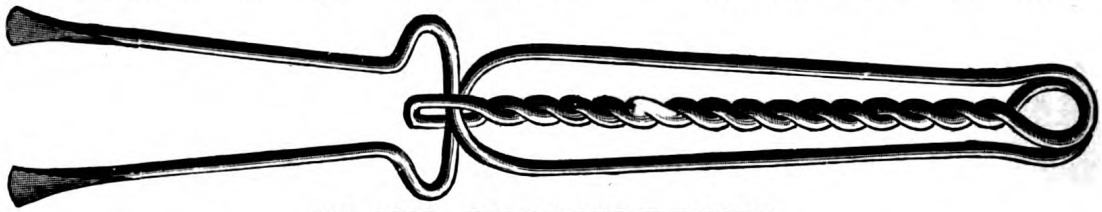
NO. 3291. GREER'S PATENT SOLDERING TWEEZER.

Price.....each, $0 25



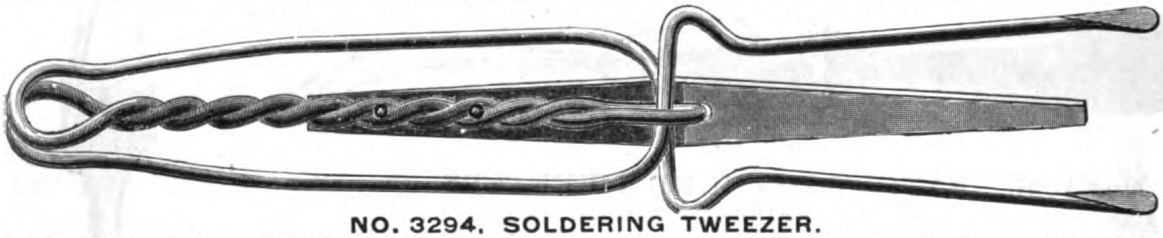
NO. 3292. SOLDERING TWEEZER.

3, 3½ and 4-inch	$0 10	4½-inch	$0 10	5-inch	$0 15	6-inch	$0 20
Price per doz., 3 to 4 inch	75	4½ "	1 00	5 "	1 25	6 "	2 00



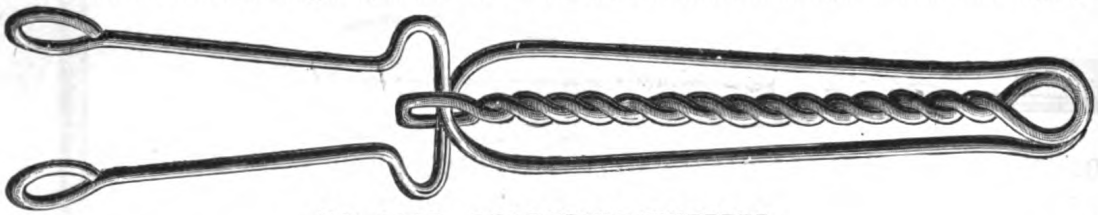
NO. 3293. SOLDERING TWEEZER.

Soldering and counteracting, with flat or ring point.....each, $0 10



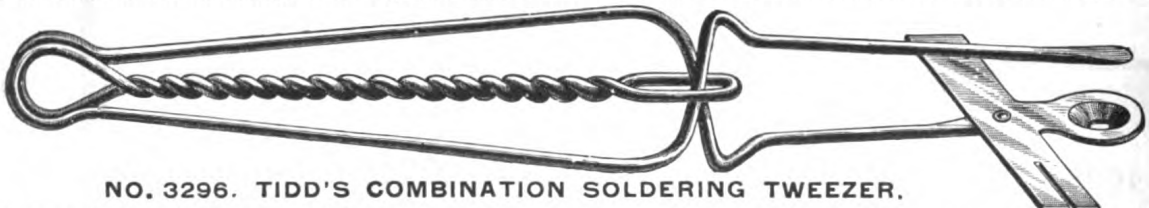
NO. 3294. SOLDERING TWEEZER.

Is intended to hold round shank goods, such as sleeve buttons, etc., firmly in their place while soldering..$0 15



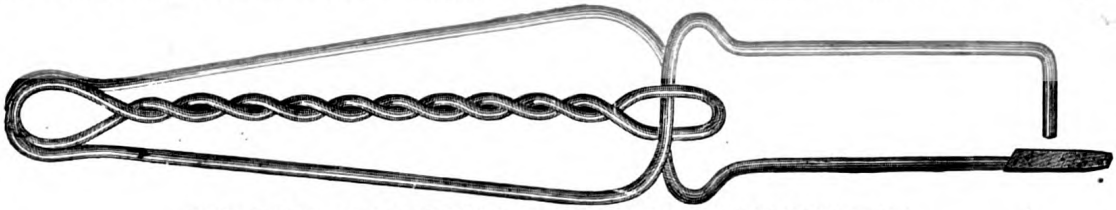
NO. 3295. SOLDERING TWEEZER.

Soldering and counteracting, with ring point.....$0 10



NO. 3296. TIDD'S COMBINATION SOLDERING TWEEZER.

Three tools combined in one. Price.....$0 25



NO. 3298. SOLDERING TWEEZER WITH HAWK BILL.

Price.....each, $0 20

NO. 3297. SOLDERING TWEEZER.

Price....$0 25

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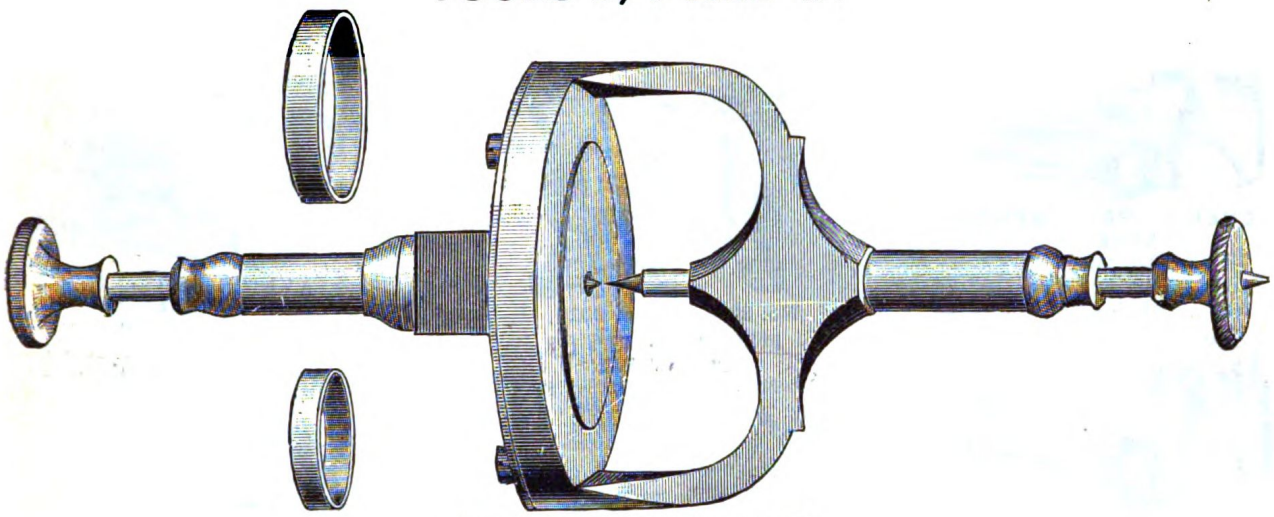
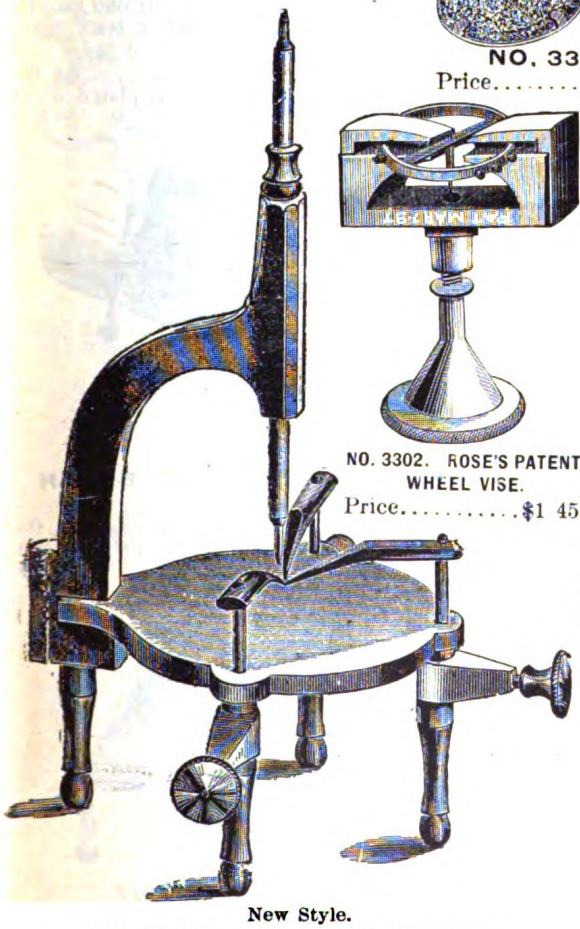
TOOLS U, V AND W.



NO. 3299. UPRIGHT TOOL.

Small	$2 50	Medium	$3 00
Large	3 50	Nickel-plating, extra	1 00

NO. 3301. WHEEL PROTECTOR WITH AS BESTOS DISCS.
Price.....each, $0 40

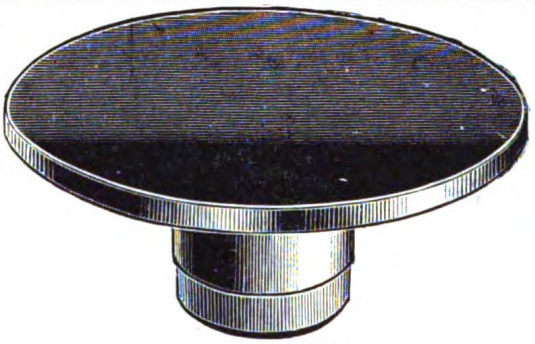


New Style.

NO. 3300. UPRIGHTING TOOL.

Extra quality, plain	each,	$2 50
" " Nickel-plated	"	3 50

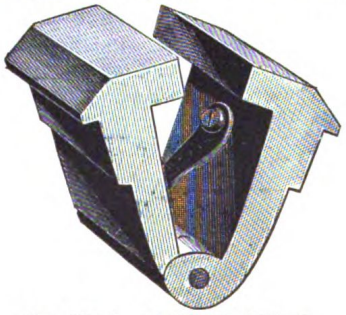
NO. 3302. ROSE'S PATENT WHEEL VISE.
Price.....$1 45



Cut is full size.

NO. 3303. THE HAMMOND WHEEL.

A new glass grinding and polishing device for the rapid grinding of Watch Crystals, Spectacle Lenses, Lockets, Glasses, etc., designed for Jewelers and Opticians. Fitted for polishing lathes, and others of similar power and speed. Full description with each box. Price.....each, $0 70



No. 3304. VISE CLAMPS.
Price...$0 40 | Nickel-pla. $0 55

Two-thirds size.

No 3305. WHEEL PROTECTOR.

Very handy for protecting wheels from heat while annealing pivots.

Price..... $0 35

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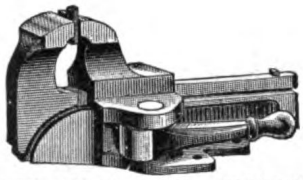
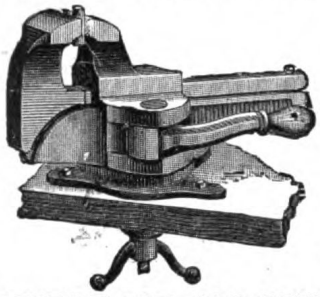
TOOLS V.



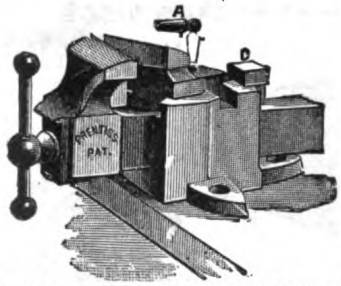
STEVENS' PAT. BENCH VISE.
Flat Base.

No. 3306. Solid Steel Bar...$3 75
" 3307. Nickel-plated..... 5 25



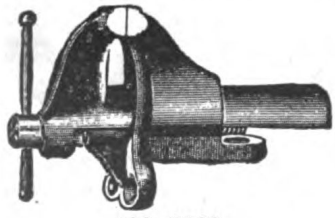
STEVENS' PAT OLD STYLE SWIVEL VISE.
Width of Jaw 2 inches.

No. 3308. Steel Face.....$3 75
" 3309. Nickel-plated..... 5 25
" 3310. Stl. face with anvil 4 25
" 3311. Same nickel-plated 5 75

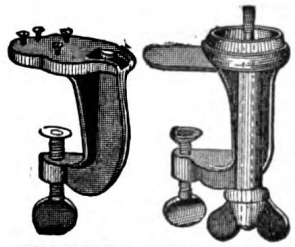


PRENTISS' PATENT BENCH VISE.
Watch-makers' and Jewelers Self-Adjusting Jaw Vise.

No. 3312. Stationery Bottom, 1¾ in. jaws, opens 1¾ in., weight 1½ lbs. Price...$3 00
No. 3313. Same as the above nickel-plated Price..... 4 75
No. 3314. Stationary Bottom, 2 in. jaws, opens 2 in., weight 3½ lbs. Price... 3 75
No. 3315. Same as the above nickel-plated. Price..... 5 25



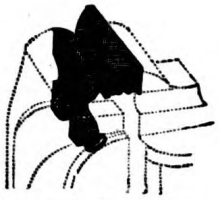
NO. 3333.
COLTON'S PATENT.
Price.....$0 25



No. 3316. No. 3317.

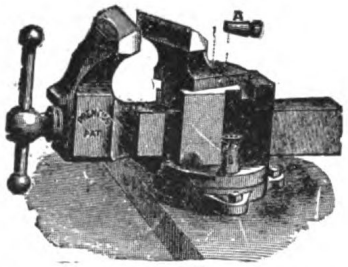
EXTRA TABLE CLAMPS FOR JEWELERS' VISE.

No. 3316. For flat vise $0 75
" 3317. For swivel vise.. 1 50
" 3317½.Nickel.. ..... 2 50



NO. 3318.
STEVENS'PATENT SELF-ADJUSTING TAPER ATTACHMENT.
Price.....$1 25

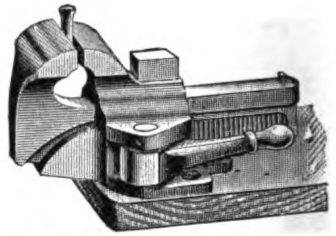
NO. 3319.
STEVENS' BRASS CAP ATTACHMENT.
Will fit any Vise.
Price.....$0 50
Nickel-plated 85



PRENTISS' PATENT BENCH VISE.

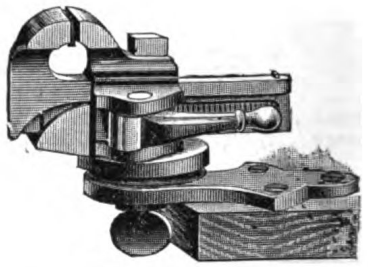
Patent Swivel Bottom Watch-makers and Jeweler's Self-adjustable Jaw Vise.

No. 3320. Patent Swivel Bottom, 1¾ in. Jaws, opens 1¾ inch, weight 2 pounds. Price.....$4 20
No. 3321. Same as the above, nickel-plated 5 65
No. 3322. Patent Swivel Bottom, 2 in. Jaws, opens 2 in., weight 4½ pounds..... 4 65
No. 3323. Same as the above, nickel-plated..... .... 6 20



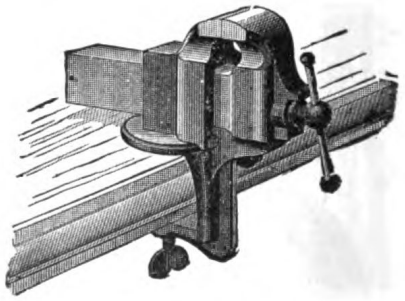
STEVENS' PAT. BENCH VISE.
Flat Base Automatic.
Solid Steel Bar and Anvil.

No. 3324. Inch automatic jaw $4 50
" 3325. Nickel-plated..... 6 00



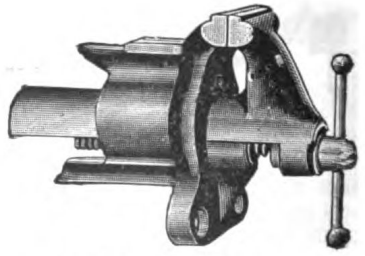
STEVENS' NEW STYLE PROJECTING SWIVEL VISE WITH AUTOMATIC JAW.

No. 3326. 2 in. automatic jaw steel anvil, steel face.....$4 00
No. 3327. Same, nickel-plated 5 50



SIMPSON'S PATENT BENCH VISE.

No. 3328. 1 inch Jaw..... .....$1 00
" 3329. 1½ inch Jaw..... . 1 50
" 3330. 2 inch Jaw..... ... 2 20



COLTON'S PATENT.

No. 3331. 1½ in. jaw, weight 1¼ lb.$0 40
" 3332. 2 inch jaw, weight 4 lbs., 90

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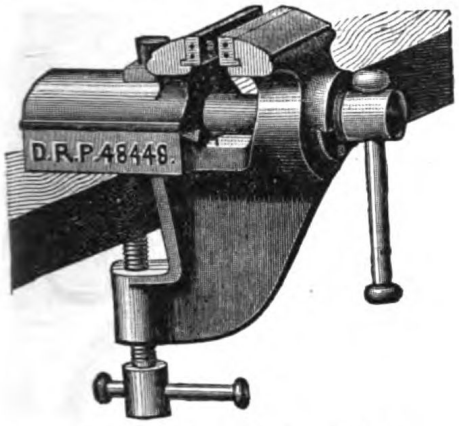
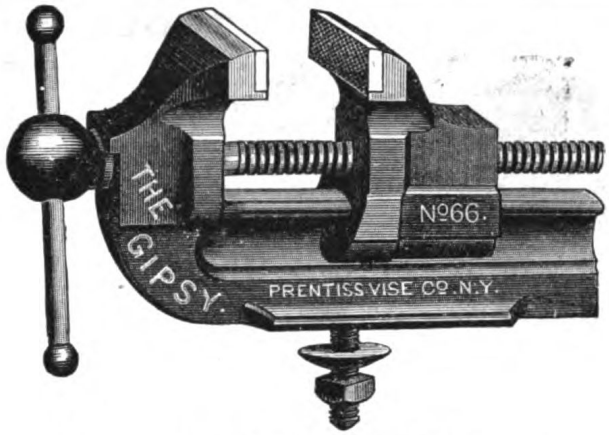


BOLEY'S NEW PATENT BENCH VISES.

We have them in two styles, Nos. 3334 and 3348, to fasten on top or from underneath the bench. The jaws are made from the best Stubs steel.

No. 3334. Price..... $2 50
" 3335. Nickel-plated..... 4 00



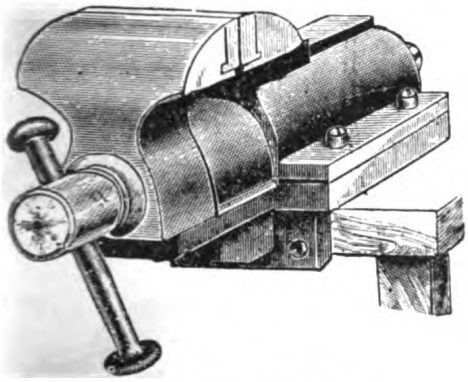
GIPSY BENCH VISE.

To supply the growing demand for a Strong, Cheap, handy Vise for **Common Uses,** we have added to our list the above implement which we think is in every way suitable for the purpose. It is made of good material, with **Steel Screw and Welded Steel Jaws Milled and Cut, is Strong, Convenient, of Ample Weight and Cheap.** Head of swivel screw moves in groove running whole length of bottom plate, allowing operator to move vise out, in, or to any desired angle and fasten in position.

The nut is made by a **long full thread** cut in **solid metal** of back jaw.

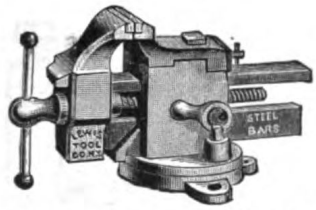
These Vises are handsomely painted and polished, and are finished equal to any first-class Vise in Market.

No. 3336.	Jaws 2½ in. wide.	Opens 3 in.	Weight 8 lbs., price.....	$1 75
" 3337.	" 3½ in. "	" 4 in.	" 14 lbs., "	2 75
" 3338.	" 4 in. "	" 6 in.	" 28 lbs., "	4 50



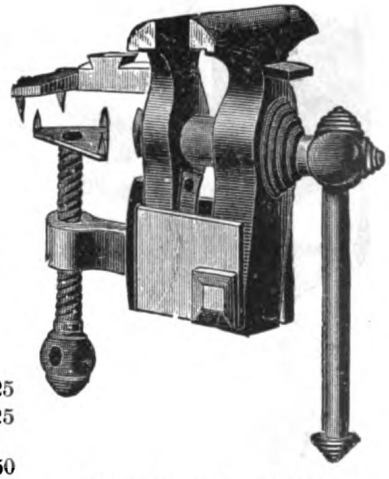
BOLEY BENCH VISE.

No. 3348. Steel Jaws..... $2 25
" 3349. Full Nickel-plate to fasten on top..... .... 3 75



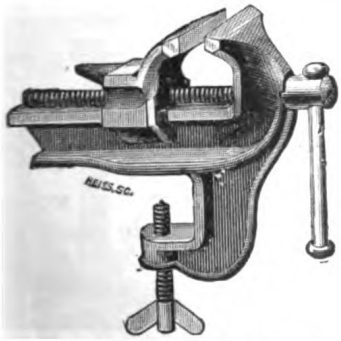
LEWIS' PATENT JEWELERS' ADJUSTABLE JAWS AND SWIVEL BOTTOM VISES.

No. 4702. Width jaw, 1¾ inch, opening 1¾ inch; weight, 2¾ lbs. Price, Japanned.....$4 25
No. 4703. Price, Nickel-plated.... 6 25
No. 4704. 2-inch jaw, 2-in. opening, 3¾ lbs. Price, Japanned..... 4 50
No. 4705. Price, Nickel-plated.... 6 50



GERMAN AND STUBS' BENCH VISE.

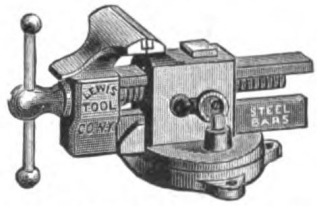
No. 3339. German, with Horn Anvils, $2 00



BONNEY'S VISE.

With Wrought Iron Screws.

	Width of jaw	Weight	Price each.
No. 3350.	1⅜ inch.....	1 lb.....	$0 40
" 3351.	1½ inch.....	1½ lb	50
" 3352.	1⅝ inch.....	1¾ lb.....	75
" 3353.	2 inch.....	2½ lb.....	1 25



LEWIS' PATENT JEWELERS' SOLID-JAW SWIVEL-BOTTOM VISES.

No. 4706. 2-in. jaw, 2-in. opening, 3 lbs. weight. Price, Japanned... $3 50
No. 4707. Price, Nickel-plated... 5 50

STUBS' BENCH VISE.

No.	Weight.	Size of Jaw.	Price
3340.	1 lb. 5 oz.	1¾ in...	$3 50
3341.	1 " 9 "	1¾ " ..	3 95
3342.	1 " 11 "	1¾ " ..	4 00
3343.	2 "	2⅛ " ..	4 25
3344.	2 " 1 oz.	2⅛ " ..	4 35
3345.	2 " 3 "	2¼ " ..	4 50
3346.	2 " 5 "	2¼ " ..	4 65
3347.	2 " 7 "	2¼ " ..	4 75

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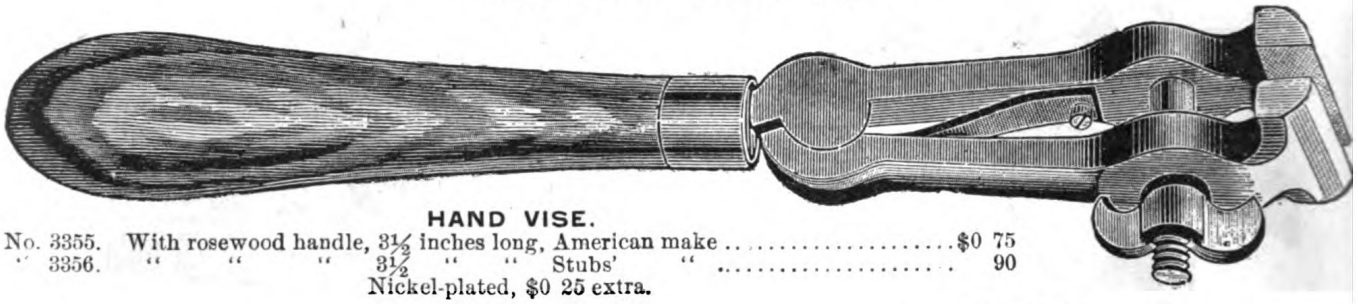
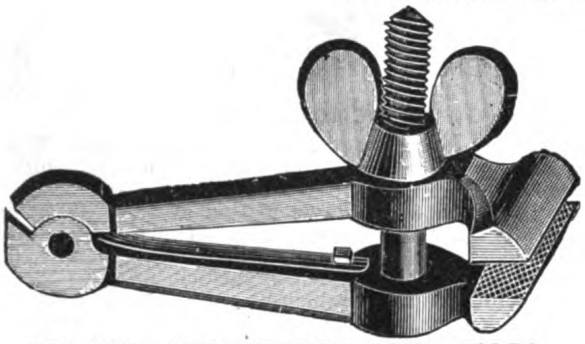
TOOLS V AND W.



HAND VISE.

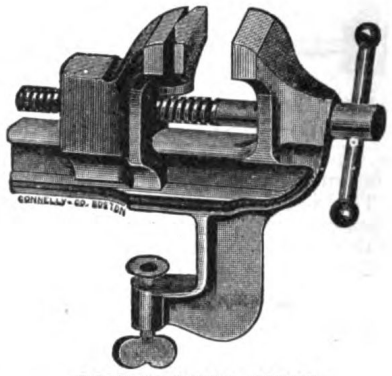
No. 3355. With rosewood handle, 3½ inches long, American make $0 75
" 3356. " " " 3½ " " Stubs' " 90
Nickel-plated, $0 25 extra.



GERMAN AND STUBS' HAND VISES.

German, Black.			Stubs'.		
No. 3357.	3 in.....	$0 60	No. 3361.	3 in.....	$0 90
" 3358.	3½ in.....	75	" 3362.	3½ in.....	1 00
" 3359.	4 in.....	75	" 3363.	4 in.....	1 10
" 3360.	4½ in.....	85	" 3364.	4½ in.....	1 25

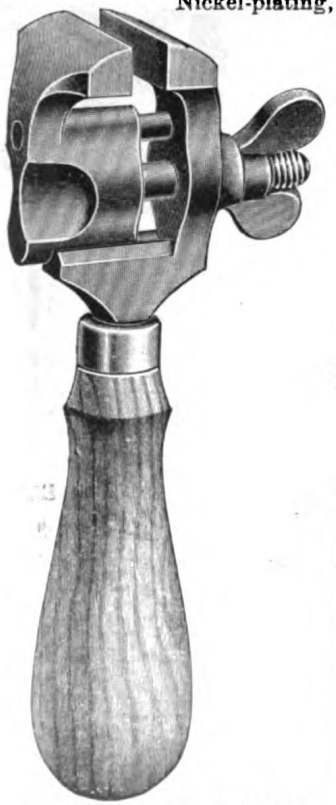
Nickel-plating, $0 25 extra.



SIMPSON'S VISE.

With swivel jaw as shown. No 3372..... $1 00

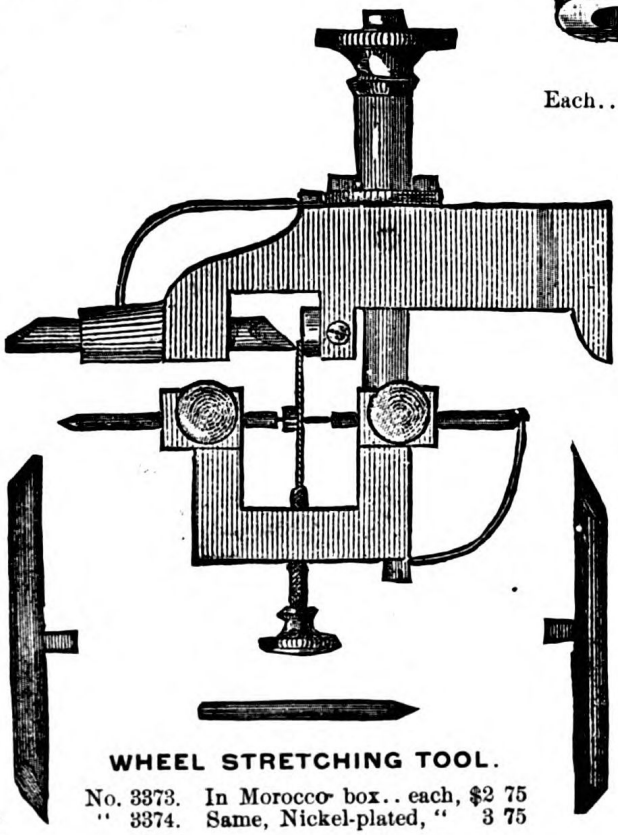
NO. 3370.
Each..... $0 40



No. 4708. BOSS HAND VISES.

Width of Jaw.	Jaw open.	Weight.
1¼-in.	¾-in.	½-in.

Price..... $0 75
This vise (except handle) is all steel, hardened throughout, and finely finished with polished jaws.



WHEEL STRETCHING TOOL.

No. 3373. In Morocco box.. each, $2 75
" 3374. Same, Nickel-plated, " 3 75

NO. 3365.
Each..... $0 15

NO. 3366.
Each..... $0 20

NO. 3367.
Each..... $0 40

NO. 3368.
Each. . . $0 10

NO. 3369.
Each..... $0 10
No. 3371. Spiral spring, each, 10

ATTACHMENTS FOR STEVENS' VISES.

Give number and page in ordering above attachments.

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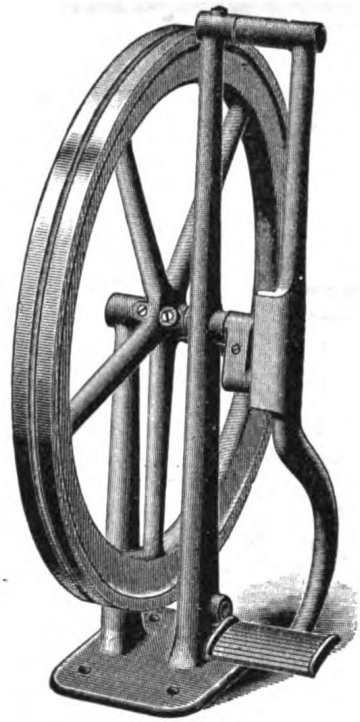
TOOLS W.

NO. 3388.

Diameter of wheel, 18 in., weight 20 lbs. Total weight, 27 lbs.

No. 3388. Price, plain.....$2 25
No. 3389. " grooved..... 2 50

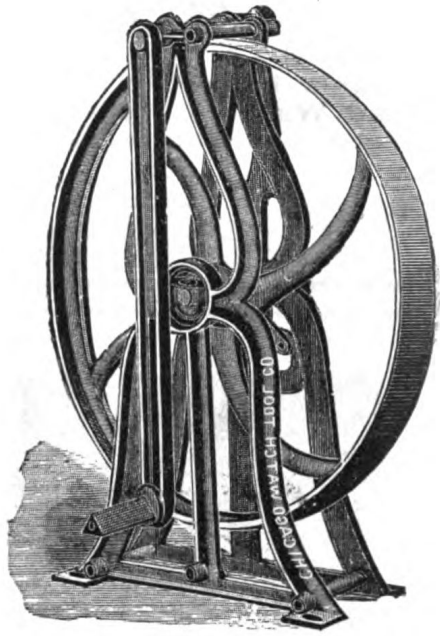


NO. 4716.

THE IMPROVED FOOT WHEEL.

Groved face. Diameter of wheel, 20 inches, weight, 40 lbs. Total weight, 65 lbs.

Price.....$6 50

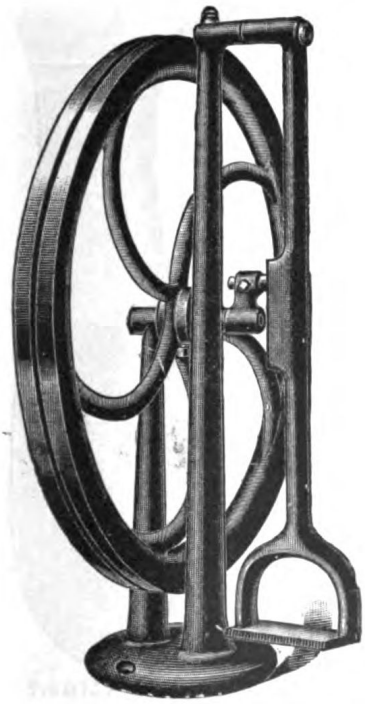


NO. 3402.

SWING TREADLE LATHE WHEEL.

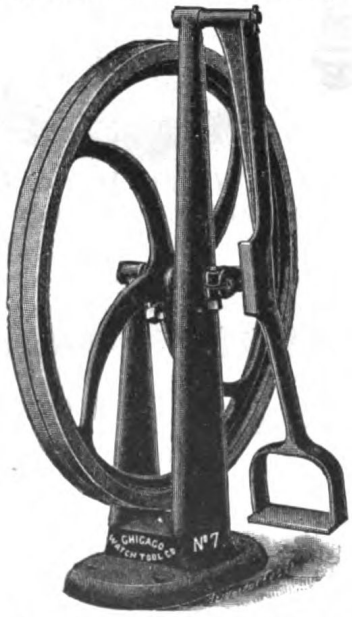
Standing or hanging, with flat, round or grooved wheel; diameter of wheel, 20 in.; weight, 25 lbs. Total weight, 45 lbs.

No. 3402. Each.....$5 50
No. 3403. With 30-lb. wheel, each, 6 75
No. 3404. 40-lb. wheel..... 8 00



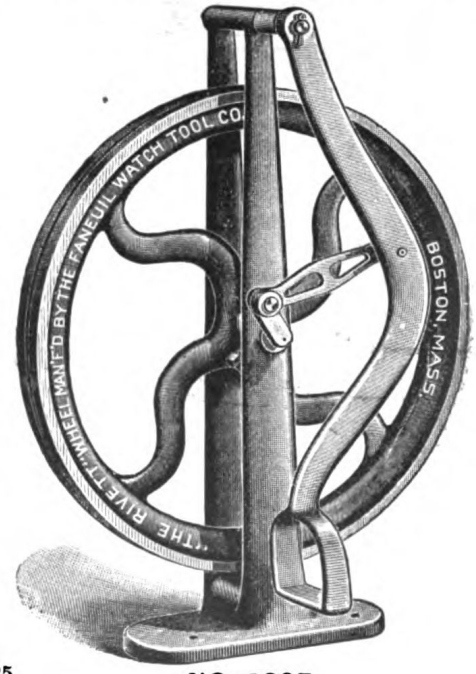
S. & CO'S TEMPLE WHEEL.

No. 4714. 30-lb. Wheel.....$5 50
No. 4715. 40-lb. Wheel..... 6 50



NO. 3394. FOOT WHEEL.

No. 3394. Price, 25-lb $5 25
No. 3395. " 30-lb..... 6 00
No. 3396. " 40-lb..... .... 7 50



NO. 3397.

THE RIVETT WHEEL.

Price.....$10 00

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TOOLS W.

No. 3414.

Bush's Movement Washers.

3 dozen.....$0 25

Wire Bender.

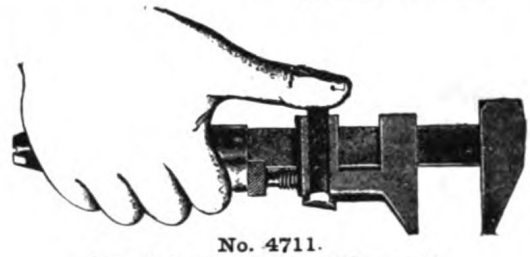
No. 3405. Maple Handle, Nickel-plated, used in clock repairing ..... each, $0 20
No. 3406. Ebony " " " " " ..... " 25

No. 3411.

Watch Repair Case.

To Place Against the Wall.

Glass front; size, 32 inches high, 24 inches wide.
Made in Oak or Walnut .....price, $6 50
Second grade finish and quality..... " 5 50



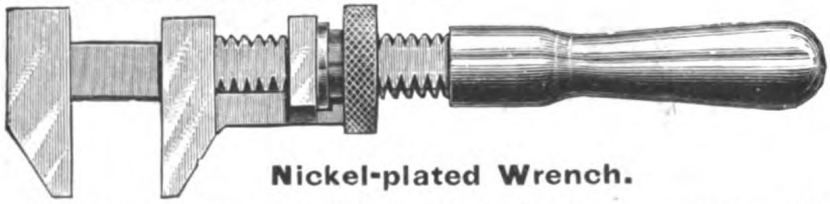
No. 4711.

Rapid Transit Wrench.

Price.....$0 75
" Nickel-plated..... .. 1 00

Watch Hand Remover.

No. 4712. Price, nickel-plated.....$1 00



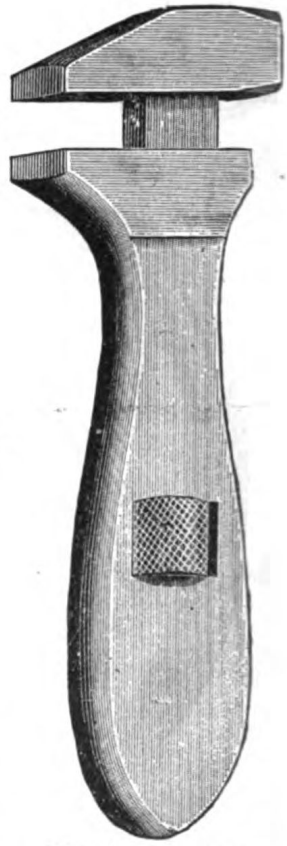
Nickel-plated Wrench.

No. 3407. 4 inch.....each, $0 60 No. 3408. 3 inch..... each, $0 50

Clock Pinion Wrench.

No. 4713. Nickel-plated..... $0 75

The above tool is especially useful in setting up clocks. If once engaged with a pinion or staff, there is no possibility of the tool slipping and displacing other parts of the movement.



Little Giant Wrench.

No. 3409. Price....$0 35
No. 3410. 5 inches long, weight 6 oz, will open ¾ in... 85

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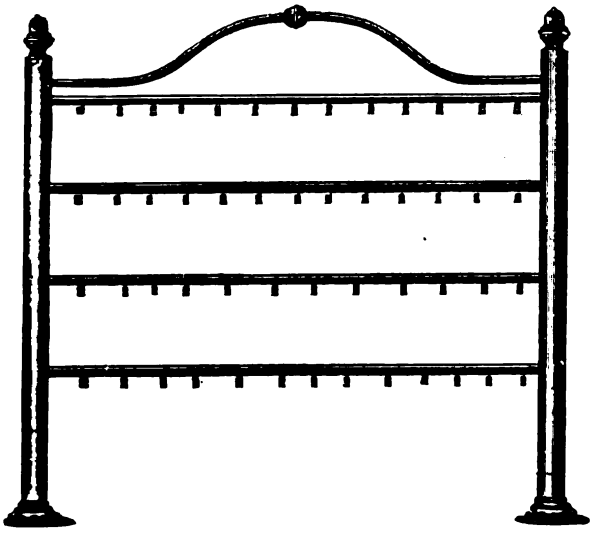
TOOLS W.

NEW AND ATTRACTIVE WATCH RACKS.

MADE IN NICKEL PLATE, OXIDIZED SILVER, OXIDIZED (OR ANTIQUE) COPPER.



ROUND STANDARDS.

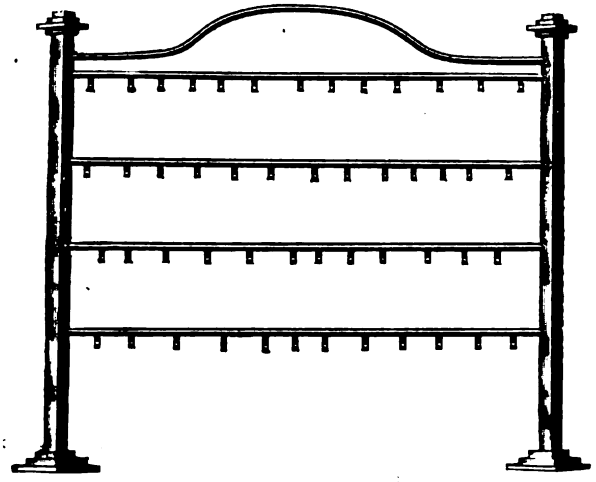
No. 4717. Price, to hold 38 watches, nickel plate..$2 25
No. 4718. Price, to hold 50 watches, nickel plate.. 2 75
No. 4719. Price, to hold 75 watches, nickel plate.. 4 25
No. 4720. Price, to hold 100 watches, nickel plate.. 5 25

ROPE PATTERN.

Same style as above. Twisted Standards and Bars.

No. 4721. Price, to hold 50 watches.....$4 50
No. 4722. Price, to hold 75 watches..... 6 00
No. 4723. Price, to hold 100 watches..... 7 50

Oxidized silver or copper.



SQUARE STANDARDS.

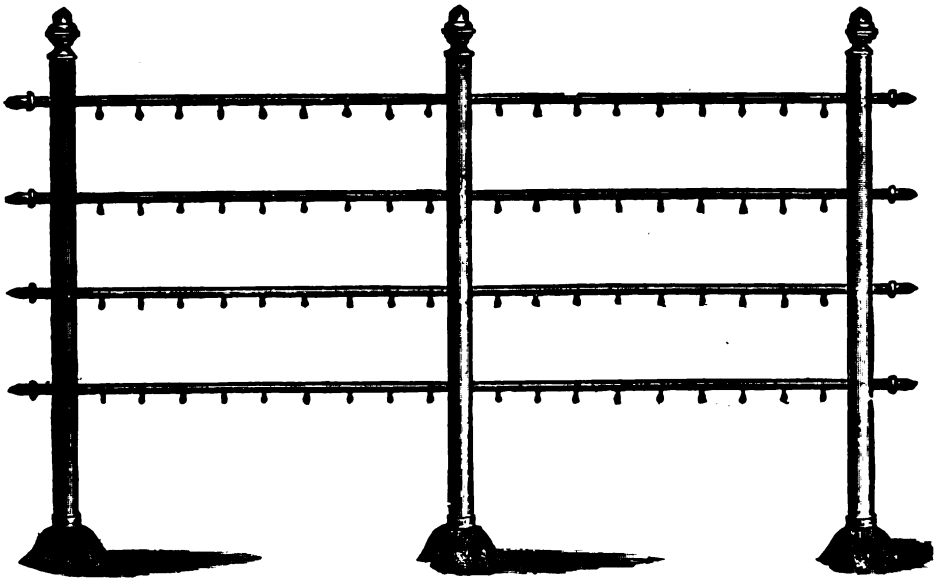
No. 4724. Price, to hold 50 watches.....$4 50
No. 4725. Price, to hold 75 watches..... ..... 6 00
No. 4726. Price, to hold 100 watches..... ..... 7 50

Oxidized silver or copper.

NEW FOLDING WATCH RACK.

Especially adapted for curtain top benches. When open it takes up the usual space of the old style racks; when closed, it is 6 inches high. Length of rack, 28 inches.

No. 4727. Price, oxidized silver $6 50
No. 4728. Price, oxidized (or antique) copper..... 6 50
No. 4729. Price, nickel-plated..... 6 00



WATCH RACK.

These racks are made of heavy brass tubing, well polished and nickel-plated.

No. 3377. Watch Rack, for 75 watches, four cross-bars 45 inches long; height, 28 inches..... $5 00
No. 3378. Watch Rack, for 100 watches, five cross-bars 45 inches long; height, 31 inches..... 6 25

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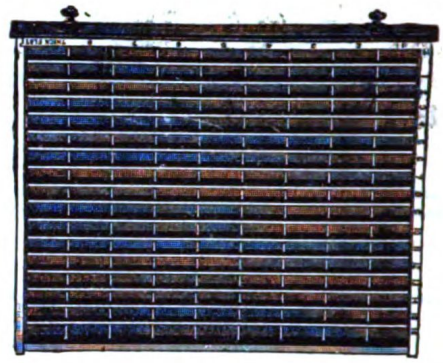
TOOLS W.

NO. 3416.

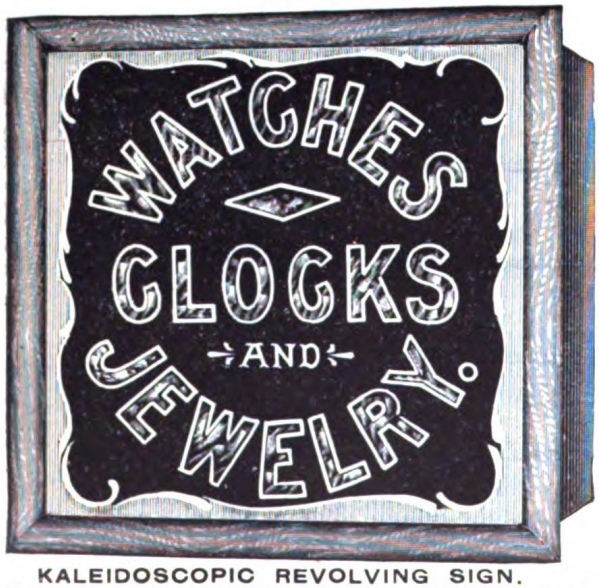


DRAWER OF NO. 3416 CASE, SHOWING ARRANGEMENT OF SPACES.

The glasses stand upon edge, and the arrangement is such that it will hold every size and height of Geneva Lunette, Patent Geneva and thick flat (for open face) glasses from 12 to 23$\frac{15}{16}$. It contains 1,456 spaces, and will hold 17,472 glasses in convenient order, so one is able at once to select the desired size and height of glass, and also make out an order for glasses when required.

The size of the case is 31½ inches high, 22½ wide, and 16½ deep. It is made of black walnut, hard finished, of most thorough workmanship, nickel numbers on the drawer fronts, and highly ornamental in appearance.

Price.....each, $15 00



KALEIDOSCOPIC REVOLVING SIGN.

This very attractive show sign is made with clock movement, and runs from six to eight hours when wound up. Encased in oak frame. The front is of glass with very attractive letters. When the clock is running the sign shows different colored letters. Being a novelty, it is very attractive. Size, 4½ inches deep and 14½ inches square. We have these in:

No. 4730. Watches, Clocks and Jewelry.
No. 4731. Watch and Jewelry Repairing.
No. 4732. Optical Goods.
No. 4733. Diamonds and Jewelry.

Price .....each, $4.00

WATCH GLASS CASE.

No. 3420. 6 drawers, oak finish.....$3 50
" 3421. 6 " extra finish..... 4 50

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WATCHMAKERS' REPAIR OUTFIT.

1 pair 4-in. English flat pliers.
1 " 4-in. " end-cutting pliers
1 " 2 hole hand tongs.
1 mainspring punch.
1 hollow pin vise.
1 pair brass calipers.
1 saw frame and 1 dozen saws.
1 hammer and handle.
1 pair N. P. tweezers.
1 " long nose N. P. tweezers.
1 4-row garantie brush.
1 3-row garantie brush.
1 brass alcohol lamp.
1 set 5 N. P. screw drivers in box.
1 " pivoting and jeweling gravers in box.
1 inside pinion calipers.
1 outside " "
1 eye glass.
1 strong eye glass.
1 set 24 punches with hollow stake.
1 Prentis bench vise.
1 anvil with hub.
1 4-inch flat file.
1 pivot file.
1 " burnisher.
1 round file.
1 square "
1 screwhead file.
1 bell metal slip.
1 alcohol cup.
½ dozen broaches, assorted.
1 agate oil cup.

1 plain brass blow-pipe (not illustrated).

The outfit illustrated above comprises everything needed for cleaning and putting in mainsprings, etc., and should be appreciated by apprentices especially, and others who do not have time to do all their work and yet do not like to send it all out.

Price, $13.00.

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